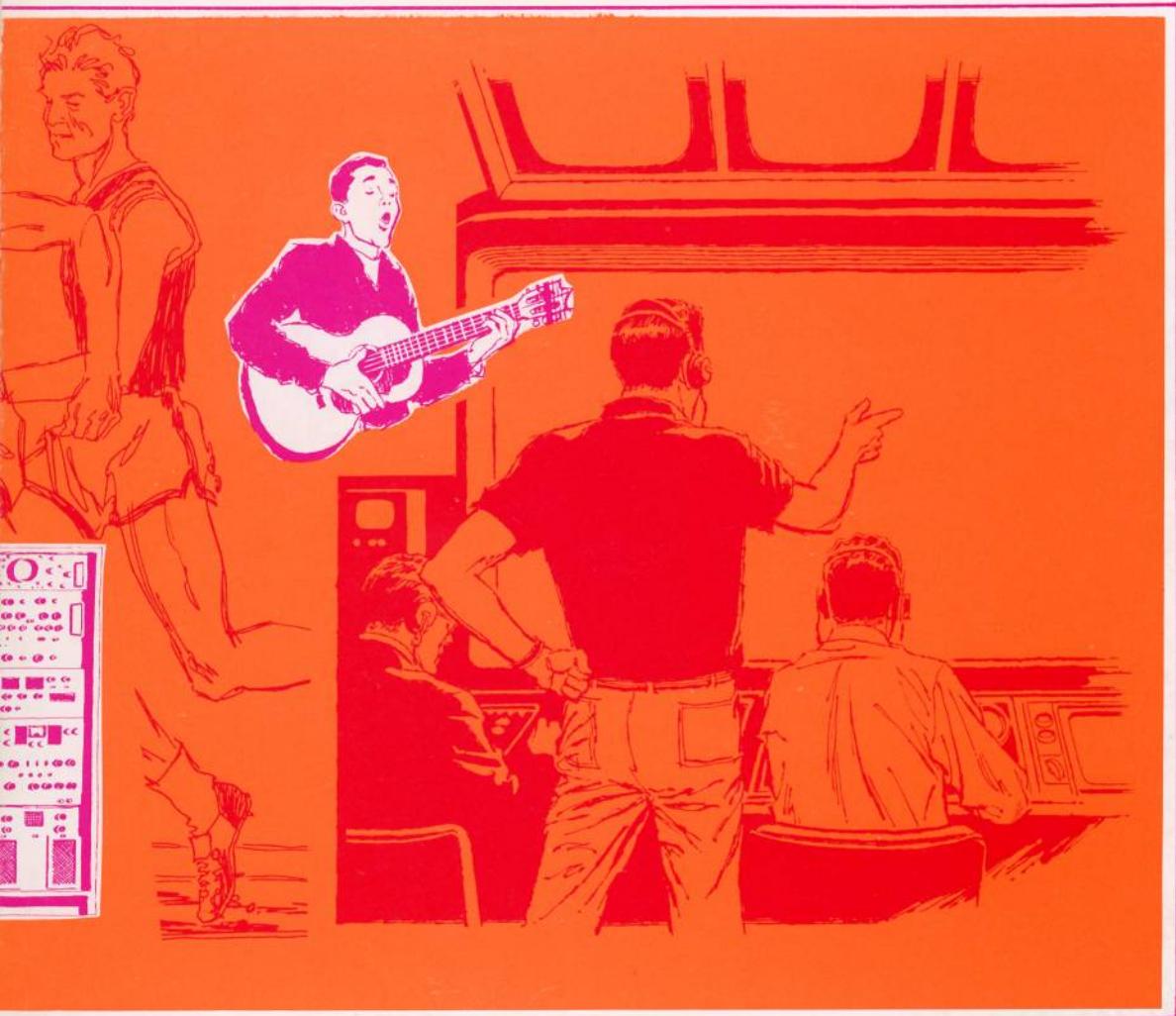


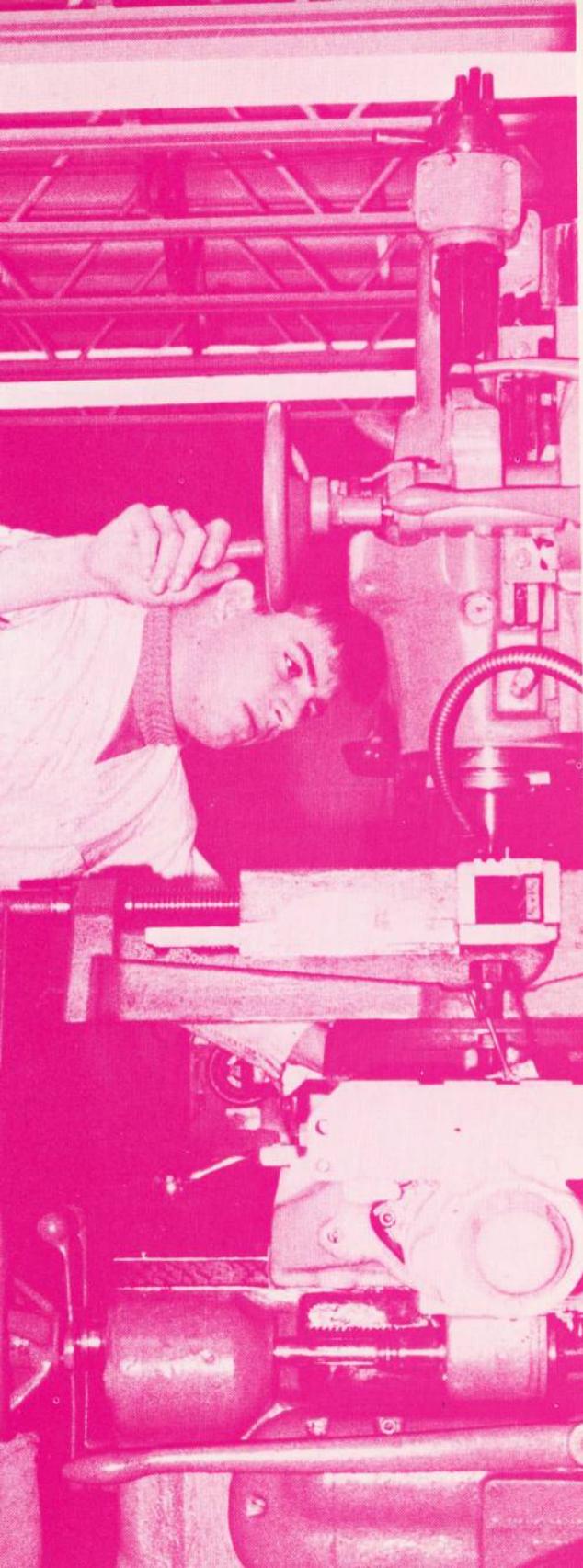
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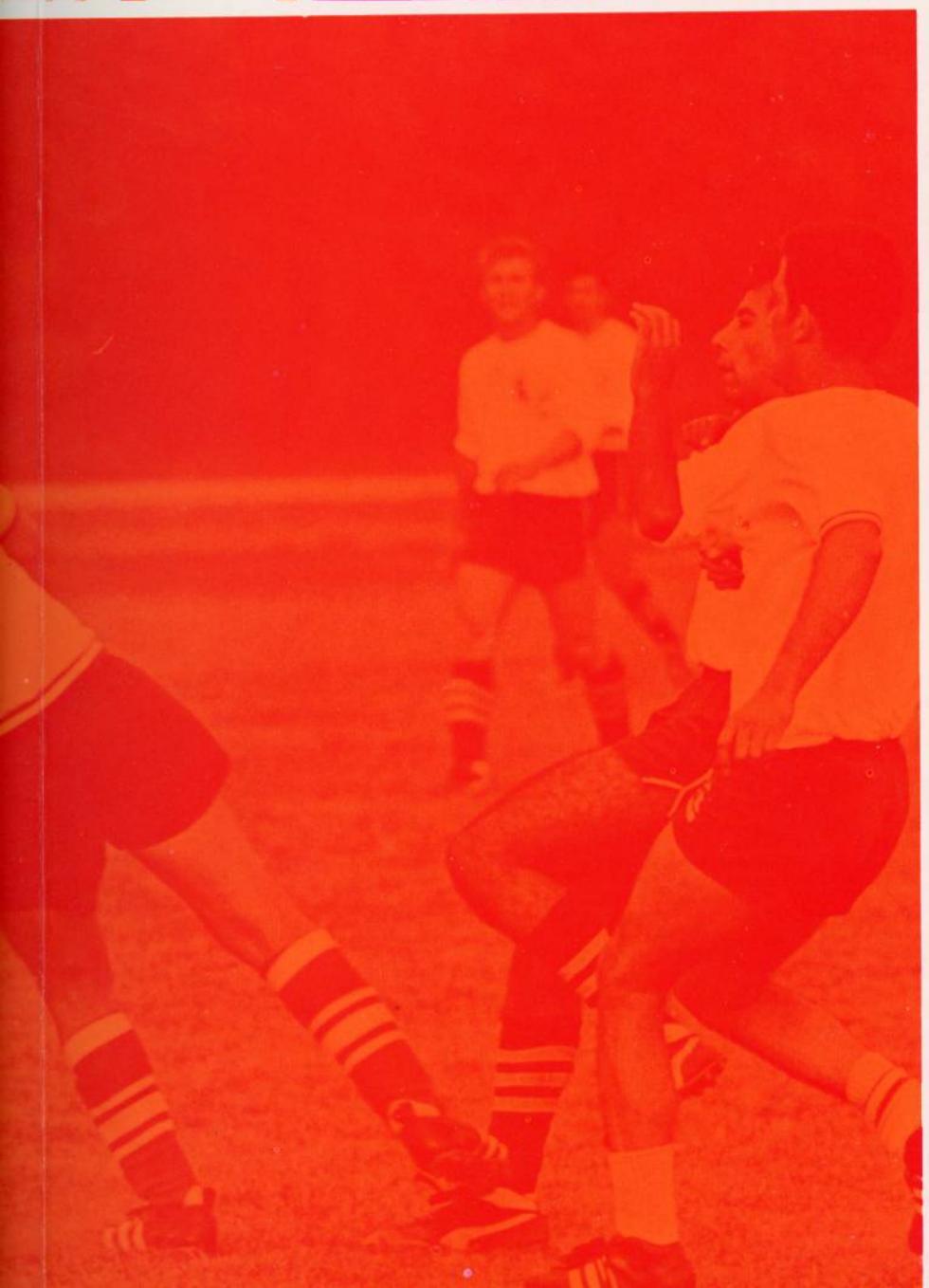
DELTA COLLEGE BULLETIN

CATALOG ISSUE • 1968-'70, UNIVERSITY CENTER, MICH.











**1968-1970 GENERAL CATALOG
DELTA COLLEGE**

UNIVERSITY CENTER, MICHIGAN



A Publicly Supported Community College Serving the
Tri-County Area of Bay, Midland, and Saginaw Counties

DELTA COLLEGE

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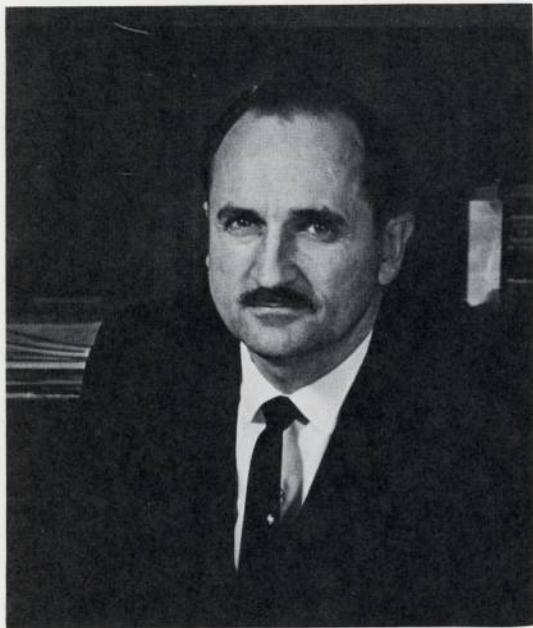
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Dean of Academic Affairs



PRESIDENT'S MESSAGE

The student, in planning his educational career, should place no arbitrary limitations on his own thinking. To paraphrase the statement of a contemporary observer, the student should use great care in setting his goals, because there is a strong probability that he will achieve these goals, whatever they might be. This is one way of saying that in today's world the only limits on an individual's accomplishments may well be those which he imposes on himself.

Delta College can provide the education you need either to achieve your short-range vocational goal, or to make a solid start toward your long-range vocational, educational, or professional objectives.

Whether you decide to enroll at Delta or at some other college or university, you should determine now, as you plan your educational program, to take every advantage of the opportunities available to you at the college of your choice.

Sincerely,

A handwritten signature in black ink, appearing to read "D. J. Carlyon".

D. J. Carlyon
President

COLLEGE CALENDAR 1969-1970

WINTER SEMESTER 1969

December 30, 31, 1968	Fee Days for Pre-registered Students
January 2, 3, 4, 1969	Registration
January 6	Classes Convene
April 4	Good Friday, Classes End at Noon
April 16, noon	Classes End
April 16, 1:00 p.m., 17, 18	Final Exams

SPRING SEMESTER 1969

April 24, 25, 1969	Registration and Fee Days
April 28	First Day of Classes
May 30	Memorial Day (No Classes)
June 2	Classes Resume
June 18	Classes End

SUMMER SEMESTER 1969

June 23, 1969	Registration and Fee Days
June 24	First Day of Classes
July 4	Independence Day (No Classes)
July 5	Classes Resume
August 8	15 Week Session Ends
August 14	Classes End

FALL SEMESTER 1969

August 25, 26, 1969	Fee days for Pre-registered Students
August 27, 28, 29	Registration
September 1	Labor Day
September 2	First Day of Classes
November 27, 28	Thanksgiving (no classes)
December 10 (Noon)	Classes End
December 10, 1:00 p.m., 11, 12	Final Exams

WINTER SEMESTER 1970

January 5, 6, 1970	Fee Days for Pre-registered Students
January 7, 8, 9	Registration
January 12	Classes Begin
March 27	Good Friday, Classes End at Noon
April 22, noon	Classes End
April 22, 1:00 p.m., 23, 24	Final Exams

SPRING SEMESTER 1970

April 30, May 1, 1970	Registration and Fee Day
May 4	Classes Begin
May 30	Memorial Day
June 24	Classes End

SUMMER SEMESTER 1970

June 26, 1970	Registration and Fee Day
June 29	Classes Begin
July 4	Independence Day
August 14	15 Week Classes End
August 19	Classes End

FALL SEMESTER 1970

August 31, September 1, 1970	Fee Days for Pre-registered Students
September 2, 3, 4	Registration
September 7	Labor Day (No classes)
September 8	Classes Begin
November 26, 27	Thanksgiving (No Classes)
December 16, noon	Classes End
December 16, 1:00 p.m., 17, 18	Final Exams

COLLEGE CALENDAR 1971

<u>EVENT</u>	<u>DAY</u>	<u>DATE</u>
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Winter 1971

Registration	Tues, Wed, Thurs, Fri	Jan 5, 6,7,8,1971
Classes Begin	Monday	January 11
Mid-Term Grades Due	Friday	February 26
Good Friday	Friday	April 9
Classes End at Noon		
Classes End	Wednesday, Noon	April 21
Final Exams	Wed (1:00 PM), Thurs, Fri	April 21, 22, 23
Grades Due	Monday, Noon	April 26

Spring 1971

Registration	Thursday, Friday	April 29,30,1971
Classes Begin	Monday	May 3
Memorial Day	Sunday	May 30
Classes End	Wednesday	June 23
Grades Due	Friday, Noon	June 25

Summer 1971

Registration	Friday	June 25,1971
Classes Begin	Monday	June 28
Independence Day	Sunday	July 4
15 Week Classes End	Friday	August 13
Classes End	Wednesday	August 18
Grades Due	Friday, Noon	August 20

Fall 1971

Registration	Tues, Wed, Thurs, Fri	August 31, Sept 1,2,3,
Labor Day(No classes)	Monday	September 6
Classes Begin	Tuesday	September 7
Mid-Term Grades Due	Friday	October 22
Thanksgiving (No classes)	Thursday and Friday	November 25, 26
Classes End	Wednesday, Noon	December 15
Final Exams	Wed (1:00pm), Thurs Fri	December 15,16,17
Grades Due	Monday, Noon	December 20

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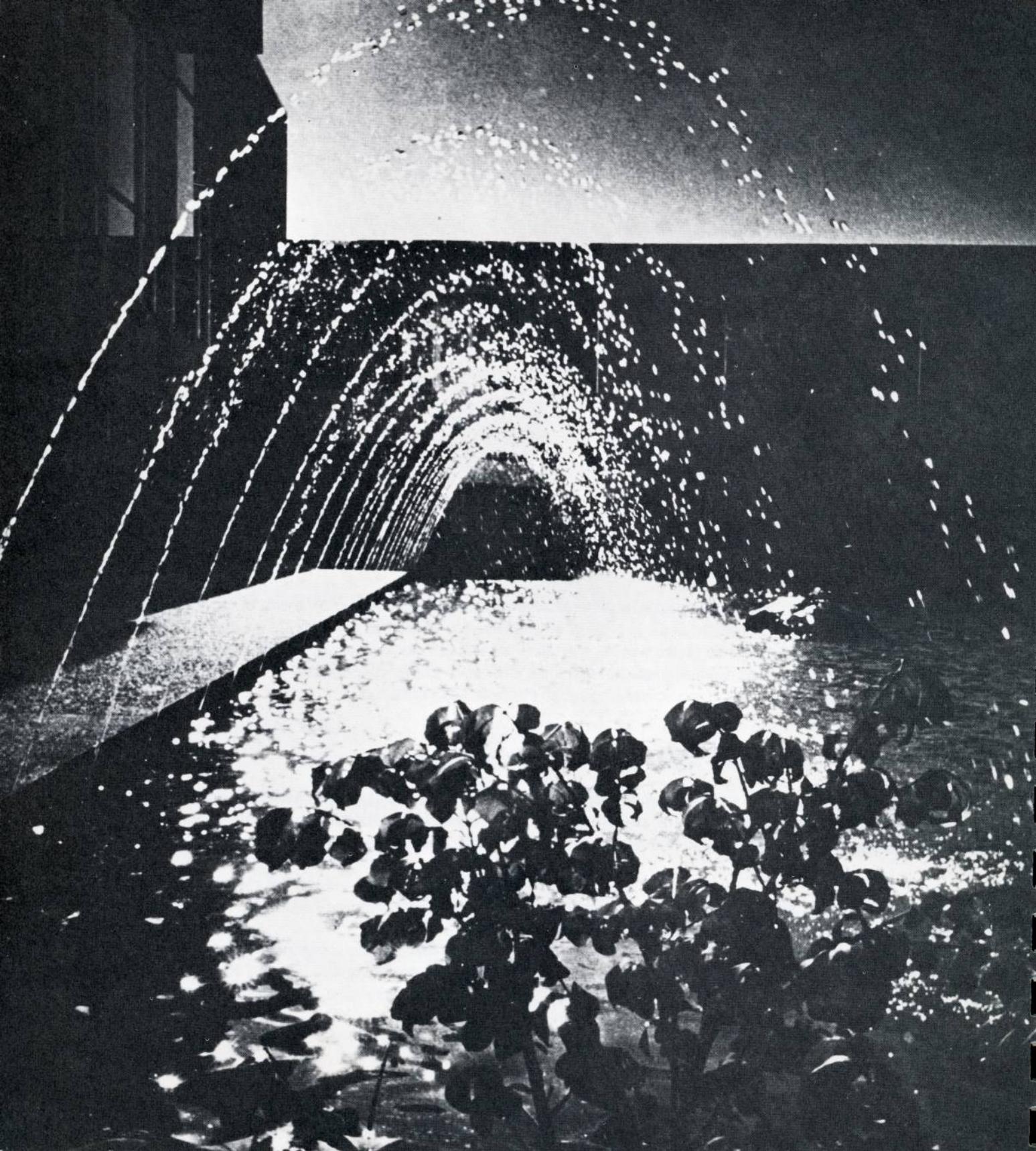
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AIMS & OBJECTIVES

Delta College is a community college with comprehensive aims and objectives determined by the people of Michigan, the citizens of the Delta College District, the faculty, staff, and Board of Trustees. The College is dedicated to the immediate educational needs of the Delta community and also to the present and future educational needs of all its constituents above high school age regardless of age or previous academic achievement. Delta College is further committed to continue and expand its participation in the social, cultural, and economic development of the Delta Community.

More specifically, the mission of Delta College is to provide the following educational services:

- Transfer courses designed to provide lower division and
 - pre-professional programs which prepare students for entry into the four-year institutions of their choice.
- Technical, vocational, and semi-professional programs designed to prepare students for employment upon completion of such programs.
- Continuing education designed to provide an expanding
 - opportunity for vocational growth and development.
- Guidance and counseling services to assist both youth and
 - adults to fit themselves better into an increasingly complex technological society.
- Cultural programs and services designed to enrich the life
 - of the community and its citizens.
- Additional services designed to make the Delta College faculty and staff available to the tri-county area for consultation, coordination, assistance, and participation in the social, economic, cultural, and educational betterment of the Delta community.



GENERAL INFORMATION

Origin, History, and General Purpose of Delta College. Delta College, a comprehensive community college, opened in 1961 after six years of planning and study. The meetings of representatives of the three counties in which the proposal for the College was developed began in 1955. Legislation was submitted to the State of Michigan in 1957, and in the same year the voters of Bay, Saginaw, and Midland Counties formed a community college district under Act 182 of the Public Acts of 1957 for the purpose of financing, building, and operating a new institution of higher learning. The three counties, with a population of 400,000 people, represent one of the rapidly growing sections of the State.

Though Delta College is a new and independent institution, it is maintaining without interruption the educational opportunities previously offered at Bay City Junior College. (See History of Bay City Junior College, page 13).

Because the College is locally financed, special consideration is given to students whose legal residence is in the tri-county area. Tuition charged for these students is substantially lower than that charged for others living outside the tri-county area.

Location and Environment. The campus is located in the approximate center of the triangle formed by Bay City, Midland, and Saginaw, but somewhat nearer to Bay City than to the other two cities. It consists of a tract of 640 acres and is bounded by Mackinaw, Hotchkiss, Four Mile, and Delta Roads in Bay County. The buildings are situated in the center of this section.

The main portions of the central building, including the Library, the Commons, and two Concourses, surround a landscaped open court one acre in area. Other areas in the central building and in ten wings accommodate faculty and administrative offices, classrooms, science laboratories, a gymnasium seating 3,000, a small auditorium seating 266, a book store, and a technical area including educational television studios,

crime, X-ray and auto-tutorial nursing laboratories, a data processing center, language and audio-visual centers and other technological aids. The open-circuit public television station of Delta College, operating on Channel 19 (WUCM-TV), is located in a separate area of the College. On-campus dormitories house 160 students. There are parking areas to accommodate 3,000 cars.

A \$10-million Campus Expansion Project is presently underway including a Music-Arts Complex; Vocational-Technical Center, at the post-high school level; Para-Medical Building; College Center and more academic classroom wings.

Accreditation and Institutional Affiliations. Delta College is accredited by and is a member of the North Central Association of Colleges and Secondary Schools. Delta is also a member institution of the American Association of Junior Colleges, the Michigan Association of Junior Colleges, and both the American and Michigan Association of Collegiate Registrars and Admissions Officers. Delta College's latest organizational affiliation is a founding membership in the Community College League for Innovation.

Institutional Affiliations. Delta College's accreditation provides academic affiliation with state and outstate colleges and universities, thereby insuring Delta students easy and rapid transferability. To further insure this status, Delta College maintains liaison with transfer institutions by preparing, with their assistance, curricula guides indicating specific academic requirements. Moreover, with their help, Delta College follows through on students' progress once they have transferred.

Delta College Credit Programs. Programs of study in Delta College day and evening course work are designed to serve students above high school age with a variety of interests and objectives.

The student who aims to complete liberal arts studies supplemented by appropriate specialized subject matter courses which will prepare him for major concentrations and professional objectives at the senior college of his choice should plan to follow the curriculum outlined for that institution as he earns an associate degree at Delta College.

The student who aims to prepare himself directly for employment should enroll in a technical-vocational associate degree curriculum or a certificate curriculum.

The student who wishes to enroll in courses to satisfy personal interests or to strengthen occupational competencies may do so without enrolling in a particular curriculum.

The student who is deficient in preparation for the program of his choice may enroll in courses designed to provide that preparation.

Admission procedures are designed to furnish the student and Delta counselors with information necessary to plan the student's initial program.

The Programs of Study section of this catalog contains general information on transfer programs in addition to specific requirements of the major colleges and universities in Michigan. Technical-vocational curricula are outlined in the Course Description section.

Continuing Education. Through Continuing Education, Delta College offers college-credit course work, evenings and on Saturday forenoons and afternoons on the Delta Campus; moreover, evenings in Bay City, Midland, and Saginaw. Questions concerning semester offerings can be directed either to Student Services or to the Associate Dean for Continuing Education. Delta not only offers its district service through its Continuing Education course work, it also accepts service from the community by hiring professional people from the area to teach on a part-time basis. Through its thorough consideration of these people's training, professional activities, and work-related

experience, Delta insures that a Continuing Education course is commensurate with day courses in academic objectives set forth, instruction given, and totality of program offered.

COMMUNITY SERVICES

Community Affairs. The Office of Community Affairs was established at Delta College in 1967. Its basic objective is providing programs, services, personnel, and staff resources to all sectors of the tri-counties (Bay, Midland, Saginaw) served by the College.

Specialists in community service development are available to coordinate, and participate in programs for the educational, social, and economic enrichment of the local communities.

Community Education Programs. Operating within the concept that an educational experience may be structured in many ways, the Community Education Programs at Delta College consist of conferences, workshops, institutes, seminars, lectures, short courses and programs for members of the community. The short courses include the Arts, Business, Classes for the Handicapped, Electricity and Electronics, Health and Physical Education, Home and Hobbies, Industrial, Career Orientation, and Women's Programs.

All of the programs operated by the Community Education Office have resulted from a defined need in the tri-county community. Requests come from business, industry, the professions, the Michigan Employment Security Office, and a wide variety of specific interest groups, organizations, and individuals.

The Programs for Women at Delta College are designed to provide:

1. Better home management and family life
2. Professional growth, job upgrading and reemployment
3. Self improvement

Both consecutive and self-contained courses are provided in the areas of Clothing and Design, Home Furnishing, Foods, Home Management, and Occupational Preparation. A continuing series of Women's Workshops provide up-to-date information on the new and exciting topics affecting the women's world.

Certificates of Achievement are awarded to persons who have successfully completed all courses provided by the Office of Community Education Programs.

Community Development. Delta College faculty, students, and staff, as well as supportive physical resources, make community research and study in many vital areas available to qualified groups.

Faculty and staff combine as individual and interdisciplinary consulting teams to provide a further source of community development.

Delta students are available as community aides for specialized tutorial projects.

SPECIAL SERVICES

Planetarium Showings. The Delta College planetarium is available for day and evening showings. The movement of the stars and constellations are projected on a darkened domed ceiling. Programs are adjusted to the celestial seasons of the year and are designed for different age levels.

Campus Tours. College-wide tours are available to all interested persons and are conducted by either the Student Tour Bureau or representatives of the Community Affairs Division. Special tours of Delta's own television station, WUCM-TV (Channel 19), and the Data Processing Center, are conducted by experienced staff members. Tours range from 30 to 90 minutes and may be combined with a planetarium showing.

Conference Development and Coordination. Conferences, institutes, workshops, symposia, and seminars are intensive short-term educational programs. Through the Office of Community Affairs, a wide range of services are available to community-based groups seeking assistance in developing such educational programs. These services include: assistance in planning the content and format of the programs; estimation conference costs and aid in establishing registration fees; arrangements for group housing, meals, and meeting rooms; preparation and processing and printing of conference programs, badges, announcements, and registration materials; handling all details of registration; provision for the use of audio-visual and recording equipment; assistance with publicity and public relations; assistance with the publication of conference proceedings or results; and assistance in evaluation of the conference program.

Speakers Bureau. Delta College's Speakers Bureau provides speakers for any professional, civic or service organization and for schools and interested groups. College faculty and staff members are available to speak on a wide range of topics.

The Three-Semester Plan. The three-semester plan was adopted by the Delta College Board of Trustees as a means of developing year-round operation of the College. The plan makes possible fuller utilization of facilities, gives students more flexibility in long-range course planning, and enables students to complete their academic programs in a shorter period of time.

The Fall, Winter and Spring semesters are each composed of fifteen weeks, and each covers a full semester's work. The Spring semester beginning in April is a multi-semester divided into two separate parts, each seven and one-half weeks in length as well as running for fifteen weeks. This multi-semester meets the needs and desires of a great number of students.

Freshman courses for high school graduates who wish to begin college prior to enrollment in the Fall semester are offered in the second half of the Spring semester. Selected courses for various curriculum will be offered as justified by demand.

The two-year academic program offered by Delta College can be completed in one and one-third calendar years. Specifically, a freshman entering in September of one year can complete four semesters by the end of December in the next calendar year; by entering in January he can finish two academic years by April of the following year; and by entering in April he can finish two academic years by August of the following year. However, students are not required to follow so concentrated a program, and course offerings are arranged to meet varying semester attendance patterns.

The Cooperative Education Plan. Cooperative education involves an arrangement with an employer enabling the student to gain work experience while attending college classes. Employment is selected for its educational value, and work assignments are coordinated with the curriculum of the student's choice. Students are enrolled under the cooperative system of education in many different fields of business and industry. Cooperative education opportunities are discussed in greater detail in the Programs of Study and the Student Services sections of this catalog.

Television. Television facilities at Delta College provide an educational opportunity for the tri-county area comparable to that available in some of the largest metropolitan centers of the United States.

Close-circuit television is an integral part of the teaching methodology at Delta College. The preparation, production, and recording of programs for use within the closed-circuit tele-

vision system is the primary function of the radio-television department. The department is basically an administrative service division.

The Delta College Broadcasting curriculum combines special Radio-Television courses with General Education classes. Students work with the professional broadcasters who serve as teaching faculty. Employment opportunities in the operation of the College radio-television equipment offer a varied and extensive practical training program for students.

As a logical extension of the community service responsibilities of a community college, Delta owns and operates WUCM-TV, Channel 19, a Public Broadcasting Station, affiliated with national and regional educational networks.

The responsibility of television at Delta College is to provide educational, cultural and public affairs programs to the residents of the district which Delta serves. To fulfill this responsibility, WUCM-TV broadcasts daily instructional programs to public and parochial schools; training programs to business and industry; children's programs, cultural programs, and public affairs programs to the general home audience.

Learning Resources Center. The Library of Delta College is a part of the Learning Resources Center and operates as an integral part of the educational program. Books, journals, magazines, newspapers, microfilm, records, and other types of Library materials and audiovisual equipment are available for student use. The east concourse provides an additional study area, with reference materials available. Acquisition of materials, and planning for the operation of the library started two years before the college opened. At present the collection numbers more than 60,000 volumes with back files of periodicals maintained either in bound print or on microfilm. The standards of the Association of College and Research Libraries, a section of the American Library Association, were met from the start of operations. The library is also a selective

government depository; a number of United States government periodicals and series are received as these documents are published.

The Audio-Visual Division of the Learning Resources Center provides the equipment and materials used in all the programs of the college. The latest and finest equipment is available through this section of the Learning Resources Center. This section also maintains two audiovisual laboratories for Nursing Education, Foreign Language Instruction, and Reading Programs.

The Graphics Division of the Learning Resources Center provides art and photographic work for the entire college. With an artist and a photographer available, this division provides an important service for the learning environment of Delta College.

The Learning Resources Center provides a book-locator service for faculty and students. This service will procure, through purchase or borrowing, almost any book needed by a student or a faculty member.

Cultural Activities. Cultural interests of the Delta Community are given a wide range of expression. Perhaps most typical of the numerous cultural events are those found in the Summer Festival of Arts, which offers work in ballet, creative writing, a summer conservatory of music, and a seminar in Theatre. Also a part of the summer program are the Concerts in the Court, which have been widely acclaimed by patrons of the Saginaw Valley Area.

The Delta College Fine Arts Series has brought to the campus a variety of lecture and concert performances throughout the school year. Available to the general public, these events are offered to students at a nominal cost. Also available to students at a nominal cost, or with no admission charge, are most of the major musical, theatrical, and artistic events of the larger communities. Displays of art by Delta students and

by students of public and parochial schools, are supplemented by "Traveling shows" designed to enrich the aesthetic experience of Delta students.

History of Bay City Junior College. The junior or community college idea was very young in Michigan when the Bay City Board of Education, in July of 1922, voted to establish the Bay City Junior College in the new Central High School building. From the start the new college was open to non-resident students at a modest extra non-resident tuition charge, as well as to resident students, and served the area for thirty-nine years. As roads and cars improved, the need for education beyond the high school increased, the percentage of students from outside the limits of Bay City steadily increased until, in the later years, about fifty per cent of the total enrollment of Bay City Junior College was non-resident, about forty per cent of the non-resident enrollment coming from Saginaw County.

After the creation of the tri-county college district, the new Board of Trustees made arrangements with the Bay City Board of Education for all students within the tri-county area to be admitted as resident students, paying only the resident tuition. The Bay City Board of Education was reimbursed for the difference of the non-resident portion of tuition from the tax funds of the tri-county district. This arrangement continued for three years, from September 1958 through August 1961.

From the time of the creation of the tri-county college district, to the opening of Delta College, members of the faculty and staff of Bay City Junior College assisted in planning for the new college, and at the opening of Delta College the Bay City Junior College faculty became part of the faculty of Delta College. In May 1958 the tri-county college Board voted unanimously to make alumni of the Bay City Junior College alumni of the new college.

Microfilm copies of Bay City Junior College records are now maintained at the Bay City Board of Education offices.

Re-Admission. A student who voluntarily withdraws from the college or who fails to attend in a regular Fall semester or in a regular winter semester must apply for re-admission at the Student Services Office and process the re-admission application according to directions. Application for re-admission should be made at least six weeks prior to the first registration date of the semester in which the student plans to re-enroll.

Classification of Students. Students who have earned fewer than 24 semester hours are classified as Freshmen. Those who have earned 24 or more semester hours are classified as Sophomores. Students enrolled for 12 or more semester hours of course work (including physical education) will be classified as full-time students. Students enrolled for fewer than 12 semester hours will be classified as part-time students.

Changes in Program of Studies after Registration. Students are expected to complete the courses in which they register. If a change is necessary, students must file an approved drop or add card at the Student Services Office. The student's decision to discontinue a course must be properly approved in the Student Services Office and is not officially recorded until a drop and add card has been completed and is on file. The date this form is approved by the Student Services Office is the date used to determine eligibility for a tuition refund.

Added Courses. In general, no course may be added after the first week of the regular semester, or after the third day of a split third semester.

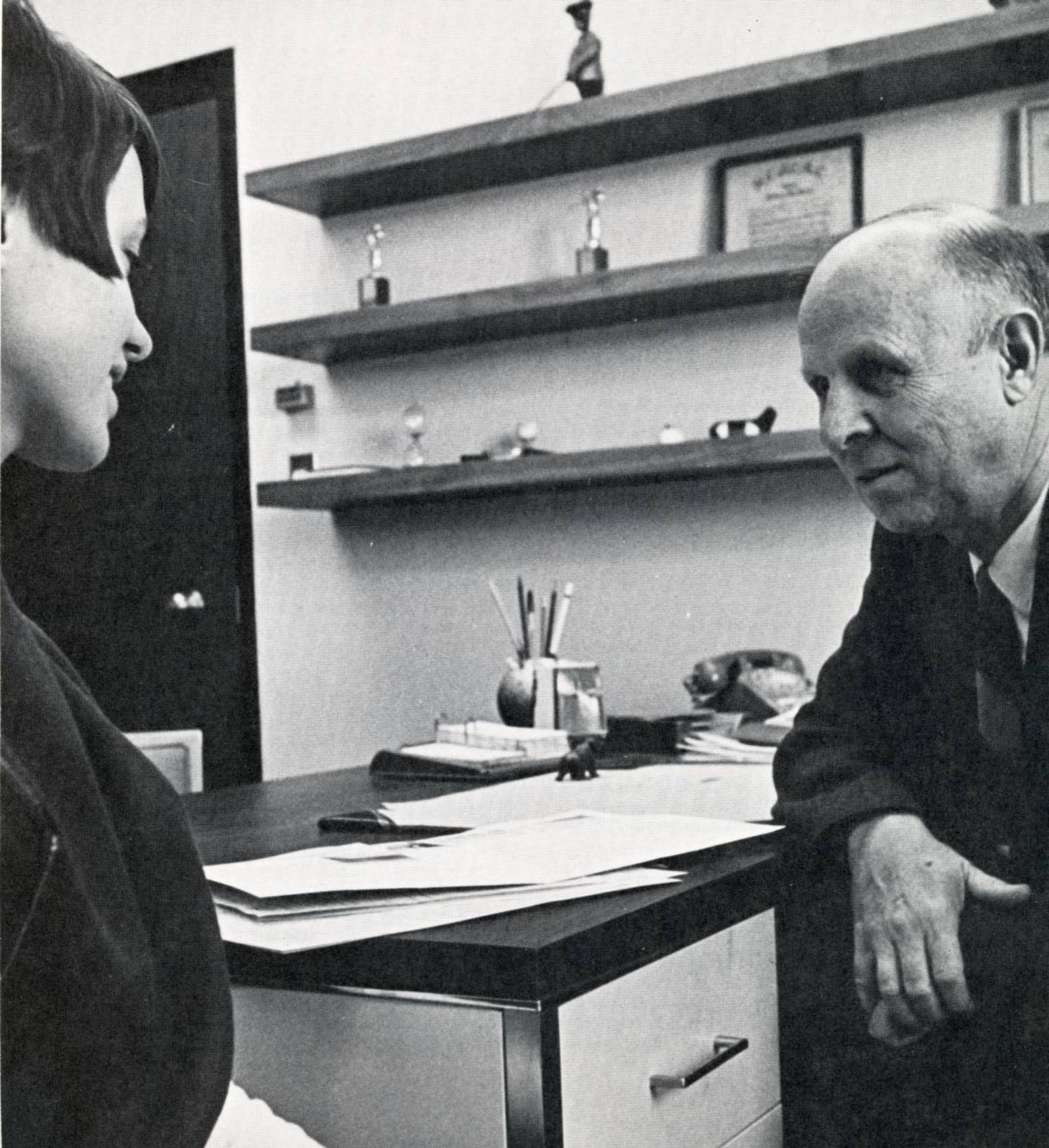
Dropped Courses. For courses officially dropped in the first week of a regular semester or within the first three days of a split third semester, no grade will be reported or recorded.

If the course is dropped after the first and before the sixth week of a regular semester or between the fourth and the thirteenth day of a split Spring semester, a grade of W will be recorded. A grade of W-D or W-E will be recorded by the instructor to indicate withdrawn unsatisfactory (or a grade of W to indicate withdrawn satisfactory) between the sixth and the end of the tenth week of the regular semester or between the thirteenth and the twenty-fourth day of a split Spring semester, and these grades will be recorded on the permanent record. If the course is dropped after the tenth week of the regular semester, or after the twenty-fourth day of a split Spring semester, an automatic E will be entered on the official class roll and on the student's record.

Repeat Courses. Credits attempted will be counted on all repeat courses in computing the student's grade point average as will grade points.

Final Examinations. Two-hour final examinations are required in all courses except physical education. Final examinations in physical education courses will be given during the last week of the semester prior to the examination days in academic subjects. No student will be excused from taking a final examination. Before the end of each semester a schedule of two hour final examinations will be announced.

Academic Record. A permanent record of a student's grades is maintained in the Office of the Registrar. Upon the request of a student, a transcript of the student's record at Delta College will be sent directly to any college, university, or prospective employer designated by the student. No charge is made for the first transcript; a one dollar charge is made for each subsequent transcript.



ADMISSIONS AND FINANCIAL INFORMATION

ADMISSIONS

Admission to Delta College. All high school graduates whose legal residence is in-district (Saginaw, Bay or Midland County) are eligible to apply for admission to Delta College. Non-district applicants whose background shows promise of college success are also eligible to apply. Acceptance is based upon previous academic work, a record of good citizenship, and an expressed sincere desire for additional education. Because of diverse curricular offerings, Delta College is able to serve students of varying backgrounds. It is essential, however, that the student be well prepared for the curriculum he wishes to follow. To this end, the results of placement tests, the high school records, and requirements of the curriculum are carefully considered by the student and his Delta Counselor. An admissions classification system, on the basis of the student's educational background and potential abilities, is used for proper placement of the student in classes. Students will be classified for admission purposes in one of the following categories: (1) regular admission, (2) provisional admission, (3) special admission, (4) guest admission, (5) transfer admission.

(1) Regular Admission. The applicant must submit a diploma from an accredited high school, or its equivalent, and demon-

strate his potential to pursue college level study as determined by individual placement test scores. High school must indicate satisfactory achievement in the following areas:

English: Three years,
Mathematics and/or Science: Two years
Social Science: Two years.

Additional requirements may be necessary for admission to certain curricula.

Because of the entrance requirements for many colleges and universities to which the Delta graduate may desire to transfer, and because the subject areas listed above are defined in minimum requirements, the following recommended achievement in high school is indicated: college preparatory English, four years; Foreign Language, at least two years.

(2) Provisional Admission. Applicants whose educational background needs strengthening in certain areas are normally admitted on a provisional basis may be limited to twelve credits. Students admitted provisionally may be required to supplement their background and achievement before being classified as regular students. Provisional students shall become regular students after demonstrating ability to do college level work.

An applicant submitting acceptable high school equivalency scores on the General Educational Development Test will be considered for provisional admission after evaluation of his previous high school record, his achievement on the G.E.D. tests, and the required placement tests. Delta College is a testing center for the G.E.D. tests. Arrangements to take these tests may be made at the Student Services Office. It is recommended that students complete their high school certificates where opportunity exists to do so.

(3) Special Admission. Special students include advanced placement high school students and degree holding students who wish to be admitted to specific courses.

(a) Advanced Placement High School Students. High School students admitted for advanced placement may be admitted to specific courses with the permission of their high school principal and when their records of high achievement and potential satisfy the prerequisites for the specific course elected.

(b) Degree Holding Students. Applicants holding college degrees may be admitted for particular courses if they satisfy the prerequisites of these courses.

(c) Temporary Admission. Special students who have been admitted prior to the completion of the admissions require-

ments will be reviewed at the end of their first semester to determine their status for the next semester.

(4) Guest Admission. Students enrolled in other institutions who wish to attend Delta College as guests must submit an approved Michigan Uniform Undergraduate Guest Application and pay all matriculation and advance deposit fees required by Delta College. Guest students applications may be secured from the Director of Admissions, or from the registrar of the institution at which the student is enrolled.

(5) Transfer Admission. Transfer students are admitted to Delta College on an individual basis. All procedures applicable to the admission of new students will be followed. Additional procedures require the submission of all academic records and a Personal Evaluation Form from each institution attended. After admission all requirements of Delta College must be met. Transfer students with academic achievement of less than "C", if admitted, will be admitted either provisionally or on probation. Transfer students should submit the records of their academic achievement as early as possible so that the records can be evaluated prior to counseling and pre-registration course selection. Transfers from regionally accredited institutions with C or better and with sophomore standing are excused from placement tests.

Admission of International Students. International students applicants will generally follow the admission procedures for regular students. Delta College requires that international students be proficient in the English language before entering course work. An additional test may be required to establish the fact of proficiency before admission. International students are admitted on an individual basis and should contact the Director of Admissions concerning the specific procedure which they should follow. It is the student's responsibility to arrange for a student visa through the United States Immigration and Naturalization Service. International students should contact the nearest United States Embassy for information and procedures regarding the procurement of a student visa. Each student will be required to purchase student insurance on registration day unless adequately covered by a health protection plan and the student must assume all financial obligations incurred while attending Delta College, including travel to and from his homeland. Delta College assumes no financial responsibility for any student and no special funds are set aside for international students. Admission to Delta College is open to all students who meet admission requirements regardless of race, creed, or color.

Procedures of Application to Delta College. Application materials may be secured at local high schools, or from the Direc-

tor of Admissions. The applicant should complete the following steps:

A. Procedures of Application

1. Fill out application.
2. Request the high school to submit a transcript of credits and a personal evaluation form.
3. Request a transcript of credits and a personal evaluation form for all post-high school education from the registrar of each institution previously attended.
4. Pay the required fees.

B. Procedures for Pre-Registration

1. Take required placement test. Full-time students, A.C.T. Part-time students, Delta Battery (Special and Guest students are not required to take placement tests.)
2. Submit Health, Blanks, applications for financial aids, co-op placement and housing.
3. Attend a scheduled orientation. (Required for full-time students, optional for part-time).
4. Make and keep a counseling appointment for class selection.
5. Pay advance tuition deposit at time of counseling.

C. Procedures for Registration

1. Complete all above procedures.
2. Keep registration appointment or make arrangements for early or late registration.
3. Pick up schedule and pay fees.

The application should be submitted as early as possible since a deadline for admission is established prior to the registration date for each semester. Questions involving admission procedures accompany each admission sheet.

FINANCIAL INFORMATION

Registration Fees. In order for an application to be processed, it must be accompanied by a \$10.00 matriculation fee. The matriculation fee is a one time only fee and will not be refunded unless a prospective student is refused admission by Delta College. An advance tuition deposit of \$20.00 is required and must be paid during pre-registration counseling. The advance tuition deposit may be refunded if the prospective student cancels his application and request a refund in writing, at least one month prior to the first day of registration.

Tuition and Fees	Delta District Students	All Other Students
Tuition per semester hour (Day or Evening)	\$10.00	\$18.00
Matriculation fee	10.00	10.00
Early or Late Registration Fee	5.00	5.00
Transcripts (First)	No Charge	No Charge
(All Other)	1.00	1.00

The full tuition for each student is due at registration time. There is no system of deferred payments. Students must complete their registration by "paying their tuition in full on the day they register".

Student loans are available through the Financial Aids Office, "but application for such loans must be made well in advance of registration."

Students wishing to stay at dorms should apply early and submit \$25.00 deposit. First payment, \$150.00 due on August 15. (other housing details listed on page 28).

TUITION REFUNDS

Withdrawal From College. After tuition has been paid and classes have begun, the following schedule will be used to determine semester refunds. In the Fall and Winter semesters, if a student withdraws during the:

NOTE — DORMITORY SPACE IS NOW AVAILABLE AT DELTA COLLEGE FOR 160 STUDENTS. The men's and women's dormitories each house 80 students in double rooms. Room and board charges are \$450 per semester. Students desiring more information or wishing to apply to student housing should contact the Director of Housing.

First Week	80%
Second Week	60%
Third Week	40%
Fourth Week	20%

No refund will be made after the fourth week.

Withdrawal refunds for the Spring Semester will be made as follows if withdrawal occurs during the:

First Week	80%
Second Week	40%

No refund will be made after the second week.

Dropped Classes. After tuition has been paid and classes have begun, refunds for dropped classes (partial reduction of class load) will be made as follows:

First Week	100%
Second Week	40%

NO refund for dropped classes after the first week.

The tuition refund policy for withdrawal from college and dropped classes applies to full-time, part-time, and evening students.

Residence Qualifications. In order to qualify as a resident of the Delta College District for tuition purposes, a student must be a bona fide resident of either Bay, Midland, or Saginaw County.

Financial Assistance. The basic forms of financial assistance available to Delta College students are scholarships, **work study**, educational grants, and loans. Further specific information on each of these forms of financial aid is presented in the Student Services section of this catalog.

Refund Policy for Eligible Persons Authorized by the Veterans' Administration. As part of the Veterans' Administration regulation for training veterans under Public Law 634, Delta College has and maintains a policy for the refund of the unused portion of tuition, fees, and other charges in the event the eligible person fails to enter the course or withdraws or is discontinued. This policy provides that the amount charged to the eligible person for tuition, fees and other charges for a portion of the course shall not exceed the approximate pro rata portion of the total charges for tuition, fees, and other charges that the length of the completed portion of the course bears to its total length.



ACADEMIC INFORMATION AND REGULATIONS

Pre-Registration Counseling. Upon completion of all admission requirements, students will receive appointments for pre-registration counseling.

Registration. The College Calendar in the front of the catalog contains registration dates. No student will be permitted to register without having completed admission requirements. A registration appointment card will be mailed to each student who has completed the pre-registration process. An advance deposit to insure the student of a schedule at registration must be paid at the time of pre-registration counseling for admitted students, or at a time announced in the student bulletin for currently enrolled students.

Normal Class Load. No student may elect more than 17 hours (not including physical education) without special permission from the Academic Dean. Such permission will require the concurrence of the Student Services Office and the Student's faculty adviser.

Class Attendance

1. Attendance is expected at all classes. There is no system of cuts.
2. Courtesy demands that students explain the reasons for their absences to their instructors.
3. It is the responsibility of the student to make definite arrangements for all work before going on field trips or other college sponsored events. If proper credentials for such activities are presented and arrangements made for the work before the event, then the absence should not be reported, but should be recorded in the instructor's records as explained.
4. Except in cases involving field trips or school activities which involve group absences no instructor will require statements from students concerning absences.

Grades and Grade Points. The following grading system will be used in college credit courses:

A — Excellent
B — Good
C — Fair
D — Poor
E — Failed
I — Incomplete
W — Withdrawn, satisfactory
W-D or W-E — Withdrawn, unsatisfactory
X — Audit

The grade point system will be as follows: For each hour of credit of

A — 4 grade points
B — 3 grade points
C — 2 grade points
D — 1 grade point
E — No grade points

In calculation of the overall grade point average, the number of E hours must be included, although no grade points are allowed.

An incomplete grade automatically becomes an "E" after the expiration date unless special arrangements are approved before the expiration date by the instructor and the Academic Dean.

Academic Standing. Any student deficient more than five honor points but less than sixteen honor points will be placed

on probation. Incoming transfer students who are on probation must maintain a 2.0 average or they will be subject to dismissal review. In no instance will a student be awarded an associate degree with less than a 2.0 average.

Any student who is deficient more than fifteen honor points will automatically have his academic record reviewed by the Committee on Academic Standing. The Committee will decide whether the student is permitted to enroll the following semester.

Right of Petition for Re-Admission. A student who is dismissed for academic deficiency may immediately submit a written petition for reconsideration to the Committee on Academic Standing if he feels that his failure to achieve satisfactory academic performance was caused by unusual personal circumstances. A student who has been dismissed must remain out of school for at least two full semesters after disqualification unless readmitted by the Committee on Academic Standing.

Re-Admission After Academic Dismissal. A student previously disqualified who wishes to re-enroll should secure an application for re-admission at the Student Services Office at least six weeks before registration for the semester in which he plans to return, and process the application according to direction.

Withdrawal from College. To withdraw from College, the student must secure a withdrawal form from the Student Services Office and process it according to directions. Failure to secure a withdrawal form or to process it according to directions will result in the student receiving grades of E in all courses.

Re-Admission. A student who voluntarily withdraws from the college or who fails to attend in a regular Fall semester or in a regular winter semester must apply for re-admission at the Student Services Office and process the re-admission application according to directions. Application for re-admission should be made at least six weeks prior to the first registration date of the semester in which the student plans to re-enroll.

Classification of Students. Students who have earned fewer than 24 semester hours are classified as Freshmen. Those who have earned 24 or more semester hours are classified as Sophomores. Students enrolled for 12 or more semester hours of course work (including physical education) will be classified as full-time students. Students enrolled for fewer than 12 semester hours will be classified as part-time students.

Changes in Program of Studies after Registration. Students are expected to complete the courses in which they register. If a change is necessary, students must file an approved drop or add card at the Student Services Office. The student's decision to discontinue a course must be properly approved in the Student Services Office and is not officially recorded until a drop and add card has been completed and is on file. The date this form is approved by the Student Services Office is the date used to determine eligibility for a tuition refund.

Added Courses. In general, no course may be added after the first week of the regular semester, or after the third day of a split third semester.

Dropped Courses. For courses officially dropped in the first week of a regular semester or within the first three days of a split third semester, no grade will be reported or recorded.

If the course is dropped after the first and before the sixth week of a regular semester or between the fourth and the thirteenth day of a split Spring semester, a grade of W will be recorded. A grade of W-D or W-E will be recorded by the instructor to indicate withdrawn unsatisfactory (or a grade of W to indicate withdrawn satisfactory) between the sixth and the end of the tenth week of the regular semester or between the thirteenth and the twenty-fourth day of a split Spring semester, and these grades will be recorded on the permanent record. If the course is dropped after the tenth week of the regular semester, or after the twenty-fourth day of a split Spring semester, an automatic E will be entered on the official class roll and on the student's record.

Repeat Courses. Credits attempted will be counted on all repeat courses in computing the student's grade point average as will grade points.

Final Examinations. Two-hour final examinations are required in all courses except physical education. Final examinations in physical education courses will be given during the last week of the semester prior to the examination days in academic subjects. No student will be excused from taking a final examination. Before the end of each semester a schedule of two hour final examinations will be announced.

Academic Record. A permanent record of a student's grades is maintained in the Office of the Registrar. Upon the request of a student, a transcript of the student's record at Delta College will be sent directly to any college, university, or prospective employer designated by the student. No charge is made for the first transcript; a one dollar charge is made for each subsequent transcript.

Recommendation for Transfer. If in addition to a transcript, a student wished a recommendation to the receiving institution, he must present his application to the Student Services Office. The recommendation from Delta College will be based on the total information concerning the individual student and not on academic achievement alone. Transfer rules vary with each institution, and for specific information on the requirements for transfer, the student should refer to the Programs of Study section in this bulletin, to the catalog of the college or university which he expects to enter, to his adviser, or the Student Services Office.

ASSOCIATE DEGREES OR CERTIFICATES

One of the following will be awarded to a student who completes the requirements:

Associate in Arts Degree

Associate in Science Degree

Associate in Applied Science Degree

Associate in Business Studies Degree

One or Two Year Certificates in Occupational Programs

Graduation Requirements. The Associate Degree requirements listed below are effective with the class entering Delta College in the Fall of 1965 and thereafter until such time as the Board of Trustees and the faculty change the requirements. Students who entered Delta College prior to the Fall of 1965 will be permitted to graduate under degree titles in effect prior to that time. Associate Degrees are granted only upon recommendation of the faculty and the Board of Trustees.

Requirements for the Associate Degrees

General Requirements

Candidates for the Associate Degree must meet the following requirements:

1. Earn a minimum of 24 semester hours of credit at Delta College. The student must be enrolled at Delta while earning the final credits to complete this requirement.
2. Earn a minimum of 60 semester hours, exclusive of Physical Education.
3. Earn a 2.0 (C) cumulative grade point average.
4. Earn two semester hours in Physical Education courses (unless officially excused).
5. Earn a minimum of three semester hours in Political Science as required in Act 106, Public Acts of 1954, State of Michigan.

For the Associate in Arts Degree:

1. The general requirements listed above.
2. Satisfactory completion of 6 semester hours in English Composition.
3. Group requirements in all three groups must be fulfilled.

I Humanities	6-8 credit hours
II Social Science	6-8 credit hours
III Science	6-8 credit hours

The requirements in all three groups must be fulfilled.

For the Associate in Science Degree:

1. The general requirements listed above.
2. Satisfactory completion of 6 semester hours in English Composition.

3. Group requirements

I Humanities	6- 8 credit hours
II Social Science	6- 8 credit hours
III Science	20-24 credit hours

Either the Humanities requirements or the Social Science requirements, but not both, must be fulfilled. The Science requirement must also be fulfilled.

For the Associate in Applied Science Degree:

1. The general requirements listed above.
2. Satisfactory completion of 6 semester hours in English Composition.
3. Satisfactory completion of one of the technical curricula or the nursing curriculum.

For the Associate in Business Studies Degree:

1. The general requirements listed above.
2. Satisfactory completion of 6 semester hours in English Composition or in Business Communications.
3. Satisfactory completion of a business curriculum.

Definition of Group Requirements

Group I Humanities:

American Literature, English Literature, Art Appreciation, Drama, Music Appreciation, Languages (French, Spanish, German, Russian), Philosophy, Speech, History III and History 112#

Group II Social Science:

Economics, Geography*, History, Political Science, Psychology*, Sociology, History III and History 112#

Group III Science:

Biology, Chemistry, Geography* and Geology, Mathematics, Physics, Physiology, Psychology*

* Geography and psychology may be included in either Group II or Group III but may not be counted in both groups.

History 111 and History 112 may be included in either Group I or Group II but may not be counted in both groups.

Certificate Requirements: Satisfactory completion of a certificate curriculum.

Graduation Honors. A student is graduated with highest honors if he has completed his curriculum with a cumulative grade point average of 3.8 or higher.

He is graduated with high honors if he has completed his curriculum with a 3.50-3.79 cumulative grade point average.

Honors graduates are those with a 3.2-3.49 cumulative grade point average. Transfer students are eligible for graduation honors if they have completed the last 24 credit hours at Delta College.

Honors. Each semester a Dean's List containing the names of all students who have cumulative grade point average of 3.5 or higher will be issued.

Student Conduct. Students are expected to set and observe a proper standard of conduct. Failure to show respect for order, morality, personal honor and academic duty demanded of a good college citizen shall be deemed sufficient cause for dismissal from the college.

Student Responsibility for Catalog Information. Students are held individually responsible for the information contained in the catalog. Failure to read and comply with college regulations will not exempt a student from such personal responsibility.



STUDENT SERVICES AND STUDENT ACTIVITIES

STUDENT SERVICES

The faculty, administration, and Board of Trustees at Delta College believe that while the intellectual development of the student is of great importance, the social, cultural, and physical aspects of the individual are an inseparable part of his development. Therefore the college provides a climate in which this total growth is encouraged and made possible. The office of the Dean of Students provides services which contribute to this development and which complement the student's academic program. Student services of a diversified nature, in addition to the supervision of student participation in college government, are administered through the office of the Dean of Students. This office is also in charge of student counseling and testing.

Educational, Vocation, and Personal Counseling. Professionally trained counselors are available in the Student Services Office to give assistance with problems of an educational, vocational, financial, or personal nature. Each student is also assigned to a faculty adviser who provides continuing assistance in the area of the student's academic interest. In addition to the required admission placement tests, the Student Services Office makes available interest, aptitude, and individual tests for any student who desires such additional information. Resource files of college catalogs, vocational literature, and other occupational information are available.

Testing. Delta College is a testing center for several national programs. Both the Scholastic Aptitude Test (SAT) and the American College Testing Program (ACT) are available at Delta College on several prescribed dates during the year in accordance with the provisions of these nationwide programs. Delta also administers the Navy College Aptitude Test. A.C.T. is required of all full-time students. The Delta Battery or A.C.T. will be required of part-time students.

The General Educational Development Test (G.E.D.) are administered through the Student Services Office by individual appointment and at a nominal fee. These tests are designed for persons who have not received a high school diploma and

who seek certain programs of study, or employment, particularly civil service positions.

Orientation Services. An orientation program is conducted during the summer and early in each semester as a means of introducing new students to college life and academic study. Through this program students are acquainted with the facilities of the college and introduced to both academic and other than academic activities. College standards and policies are discussed in an orientation assembly and students are encouraged to participate in all phases of college activities.

As a means of orientation to academic study beyond Delta College, a liaison with the four-year state institutions is maintained in order to provide students with the necessary information to prepare for transfer to a baccalaureate degree program. This orientation also includes interviews with senior college representatives for assistance in application for transfer.

Health Services. Delta College maintains a health center which is equipped to provide emergency treatment and check minor health problems. A registered nurse is on duty from 8:30 a.m. to 10:30 p.m. on school days, and from 8:00 to 12:00 a.m. on Saturdays. Failure to provide the Health Services with physical examination record by a competent physician may result in dismissal. Student health and accident insurance is available at a low rate. All international and out-of-state students are required to have health insurance.

Student Housing. The college operates two residence halls for full-time credit students; North Hall for men and South Hall for women. Each Hall houses 80 students in 40 double rooms. Room and board for academic 1968-69 is \$450 per semester.

In addition to Delta on-campus housing, Andersen Hall operated by Saginaw General Hospital, Saginaw, Michigan is available to Delta nursing students. Room cost in Andersen Hall is \$10.00 per week. This does not include meals. Students living in Andersen Hall may purchase their meals on a cash basis in the hospital cafeteria.

Applications for residency in the campus dormitories or Andersen Hall may be obtained from the Housing Office. Students requiring assistance in finding private housing should also contact the Housing Office.

FINANCIAL AIDS

Three basic types of financial assistance are available to Delta College students. These are scholarships, loans, and grants and part-time employment. Scholarships are not repayable and are awarded on the basis of academic achievement and financial need. A few scholarship grants are made which require relatively low academic achievement, and repayment only when the recipient is able to do so. Loans are both long term and short term and require repayment in accordance with a pre-arranged schedule to Delta College, to the commercial bank, or to the loan fund from which assistance was obtained. Part-time employment is described under Placement Service.

Educational Opportunity Grants are awarded on a yearly basis to eligible students. Eligibility for Federal Aid is determined by a parent's financial statement. The parent's financial statement is required for all Financial Aids Programs offered by Delta College except the Short Term Emergency Loan Fund.

Scholarships. Funds available to Delta College students in the form of scholarships have been provided through the generosity of interested individuals and firms. Application for these awards is made through the Financial Aids Office on a specific form for scholarship aid. In addition to demonstrated academic achievement and financial need students make application and qualify for particular scholarships on the basis of information obtained through the application procedure. The following are scholarships awarded on a multiple recipient basis.

- American Production Inventory Control
- The Seth Babcock Fund
- The Alvin Bentley Foundation
- The Mr. and Mrs. Herbert D. Doan Endowment Fund
- The Dow Chemical Company Fund

The Mr. and Mrs. James Gerity, Jr. Broadcasting Trust
Agreement

The Frances Goll Mills Education Grants

Lowery-Northern Automotive

The United States Graphite Company Fund

American Institute of Architects — Saginaw Valley Chapter.

A number of individual recipient grants are made on an annual basis from funds obtained through interested individuals, industries, and organizations in the Delta College District.

These include:

- American Business Women's Association
- Bay City Business and Professional Women's Club
- Bay City Panhellenic Fund
- Bay City Chapter Zonta International
- Leonard Bergstein Memorial
- Consumerettes
- Delta College Women's Club
- Fred Dulmage, Sr. Fund
- Lucy Hammond Gamble Fund
- Lawyers' Wives of Bay County
- March of Dimes — Saginaw County Chapter
- Midland Panhellenic Fund
- National Secretaries
- Pi Omicron National Sorority Foundation
- Saginaw Business and Professional Women's Club
- Saginaw Civic Newcomers
- Saginaw County Junior Reading Club
- Saginaw Hellenic Society
- South Bay City Businessmen's Association
- Saginaw Insurance Association
- South End Businessmen's Association of Saginaw
- West Side Faculty Dames

All donors may not be listed here, since this a continuous program and several scholarships may have been established after this catalog had gone to press.

The Board of Trustees Full Tuition Scholarship is granted to one graduating senior from each of the public and parochial

high schools in the Delta College district. These awards are made on the basis of high scholastic achievement, and selection is made from the nominations by the high school principal. These scholarships provide full tuition for as many consecutive semesters as the student maintains a prescribed standard of scholastic achievement, to a maximum of four semesters.

State of Michigan Competitive Scholarships. High school graduates who receive State of Michigan Competitive scholarships may attend Delta College as recipients of these grants.

Loan Funds. Delta College can assist students with loans from three different sources. Application for these loans must be made well in advance of registration.

A substantial amount of money is available under the National Defense Student Loan Fund. This fund has features which make it exceptionally valuable to students who qualify. The interest rate is low and payments in most cases do not begin until a student's college work is completed. In addition there is a feature providing forgiveness of a portion of the loan for students who enter the teaching profession. Applications for National Defense Student loans are made through the Financial Aids office.

It is possible for students to obtain personal loans for college expenses from local banks on limited security by applying through the Michigan Higher Education Assistance Authority. This is possible because all approved loans are assured to the participating banks, and Delta College is a member of the Authority.

Delta College also has a Short Term Emergency Student Loan Fund. Applications for short term loans must be made through the Financial Aids Office. This fund is supported by contributions received from many individuals and agencies within the Delta College district.

PLACEMENT SERVICES

Part-Time Employment. While the College cannot guarantee to secure part-time employment for every student, an effort is made to find work for those who apply.

Cooperative and Related Work-Study Programs. Students interested in cooperative education programs which offer employment related to curriculum should contact the appropriate coordinator in the Placement Office.

Full-Time Employment. Delta College has a Placement Office which is of service to student, alumni, and employers.

OTHER FACILITIES

Book Store. A modern well-equipped book store, located on the court level adjacent to the Commons, serves students, faculty, and other interested individuals. This facility is open daily.

The Commons. Food services, lounge facilities, and meeting rooms are provided in the Commons area which is located on the court level at the north end of the building.

Bus Transportation. Bus transportation from Bay City, Saginaw and Midland, and return is provided by a private operator. This facility allows the student to arrive early each day in time for classes and return home at the close of classes to either of the cities indicated.

Parking. Ample parking facilities adjacent to the College building are provided for students, faculty and guests. Regulations and car registrations for parking are provided by the Business Office and explained in detail in the Student Handbook.

STUDENT ACTIVITIES

Philosophy. Delta College as an institution of higher education has a commitment to assist its students to develop in body, mind and spirit. Recognizing a need for a complete educational program, the College has included in addition to its full academic offerings a complete co-curricular activity program. In establishing such a program the College offers students the opportunity to participate as a leader in the college community.

Co-curricular activities is in allegiance with the educational

program of the College; for student activities is a "laboratory" of "creativity". It is designed to assist young people to develop their talents in group leadership, music, theatre, and or writing as well as giving them a sense of social responsibility.

Through the program, students are given a chance to better understand themselves, their fellow students, the faculty and the administration. The involved students are trained in lines of communication and the channels of command; for they are being groomed to take their place in adult society with adult responsibility.

Diversification in this program is essential, for all students are not alike. Students interests differ as does hair styles and for this reason Delta College has encouraged a variety of student organizations, professional associations and many interest groups, whereby students may be able to develop their talents and interest of their own choosing.

Student Government. The student governing body at Delta College is the College Council. It derives its authority and responsibility from the Student Council Constitution. The basic philosophy of the College is the belief that students must share with the administration and faculty the responsibility for their own total development. To this end they should have opportunities to participate in a variety of activities and should have responsibility for initiation and control of these activities. Several organizations are provided to fulfill this control and to implement the activities program, under the governing of the College Council.

The College Council is composed of four executive officers, five sophomore representatives and nine freshman representatives. The executive officers — President, Vice-President, Secretary, and Treasurer — are elected by a vote of all full-time students during the middle of the Winter semester. The sophomore representatives are elected a week later. Freshman representatives are elected during the first month of the Fall semester. All executive officers and representatives have one vote. A parliamentarian is chosen from the freshman and sophomore representatives at large.

The College Council is composed of the following six boards: Athletics, Activities, Judicial, Publications, Finance, and Convocations.

The chairmen of the respective boards are appointed from the freshmen and sophomore representatives at large by the President of the College Council. Exceptions to this are the appointments of the Activities and Finance Board Chairmen. These appointments are given to the Vice-President and Treasurer of the College Council, respectively.

Student Interest Groups. At Delta College there are a variety of activities on campus reflecting the diversity of student interest. Delta students are encouraged to form groups which have common interest or hobbies. Recognition of such clubs may be gained by securing the proper application from the Office of Student Services and petitioning the College Council for recognition. Faculty advisers are designated as sponsors upon request of the club. Such groups participate in the areas of art, music, political and international affairs, departmental or professional subject groups, political parties, and religious activities. Additional information about any of these organizations may be obtained from the Director of Student Activities.

STUDENT PUBLICATIONS

Delta College has three student publications: the yearbook, *Gnosis*; the student literary magazine, *Dialogue*; and the newspaper, *Collegiate*.

Gnosis. Preparing the yearbook is the job of a group of dedicated students. They receive no pay but they seem to derive satisfaction from doing their job well. Aside from the restrictions inherent in a yearbook — that it be a record and a history — the editors have a free hand. They select cover and content, color and design, type and stock.

Dialogue. Delta's literary magazine is presently published once a year, but last year's student interest indicates that publication should be increased to once a semester. Contributions of writing, drawing, and photography, come from the student body

at large. An editorial board and an art board selects the material to be used from these works.

Collegiate. The Collegiate, official weekly student newspaper, is entirely student produced. It is supported by an allocation from the Finance Board of the College Council and by some advertising revenue.

All of Delta's student publications serve as laboratories for student development and student-directed activity. They reflect the co-curricular activity and philosophy in giving students an opportunity to put into practice outside of class what they may have developed in class. Delta students are encouraged and cordially invited to take part in the production of one or all of the student publications.

The Student Directory, distributed early in the year, lists the address and telephone numbers of all students, faculty, and staff members.

The Delta Student Handbook is published as a general source of information specifically designed for students by students.

Intercollegiate Athletics. Delta College is a member of the Michigan Junior College Athletic Conference and the National J. C. Athletic Association. We offer seven intercollegiate sports for men including Soccer, Cross Country, Basketball, Wrestling, Tennis, Track and Golf. Delta is one of the few junior colleges in Michigan offering an Intercollegiate program for women. The women's program includes Field Hockey, Volleyball and Basketball.

Intramural Program. The Division of Health, Physical Education and Recreation offers a diversified program of Intramural and Women's recreational Activities for the Delta student. Students interested in the program should contact the Division of the activities offered.

Sororities and Fraternities. As of April 1967, Delta College officially recognized four sororities and four fraternities. These

groups are governed by the Inter-Sorority and Fraternity Council (ISFC) and are responsible to the Faculty-Greek Advisory Board (FGAB). All the Greek societies are local and have no national affiliation. Each organization encourages high scholarship and active participation in school activities.

Social and Cultural Events. Delta College has several outstanding musical groups, including the choir, the Delta College Singers (selected from the choir), and the Wind Ensemble group. Too, there is the theatrical group known as the Delta Players. They have presented such plays as "Harvey," "the Imaginary Invalid," "The Glass Managerie," and "Raisin" in the Sun."

In addition to this, the Convocation Board of the College Council has coordinated two film programs: International Film Series (foreign films in original dialogue with English subtitles) and the World Around Us Series (organized on the theme of people, places and things). The Activities Board, too, has had much success with its film series: "Classics from the Flicker Days" (old time movies) and "Weekend Movies" (recent releases). Plus there are regular speakers and lecturers brought to the campus as well as the Health Film Series.

Also, Delta College students attend many of the Tri-city community cultural programs. The student Convocation Board has made it possible for Delta Students to attend such programs free of charge. The Board is able to do this, by purchasing blocks of season tickets, at a discounted rate, each year. Listed below are the names of the organizations supported by the Convocations Board:

Bay City Community Concerts
Bay City Players
Midland Little Theater
Midland Music Foundation
Midland Symphony Orchestra
Saginaw Community Concerts
Saginaw Pit and Balcony
Saginaw Symphony Orchestra



PROGRAMS OF STUDY

TRANSFER PROGRAMS

Group Requirements of Selected State Colleges and Universities. A variety of curricula, or programs of study, are available to Delta College students. Generally, these curricula are two years (four semesters) in length and culminate in the awarding of the associate degree; however, a few are less than two years and some of the health careers and technician programs are five and six semesters in length.

Transfer curricula provide the first two years of study needed to fulfill requirements of senior colleges and universities awarding the baccalaureate degree. Delta College maintains up to date information and continuous liaison with the senior colleges in Michigan regarding the requirements for transfer. Curricula sheets for the state colleges and universities are maintained in the Student Services Office and may be obtained at any time. A file of both state and out-of-state catalogs is also available. Students are advised to use both the curricula sheets and the catalogs in determining their course schedules. Counselors also are available to advise students on transfer problems.

Basic Requirements. The following is a listing of the basic requirements for most of the public senior colleges in Michigan. There may be variations from these requirements for specific curricula, and each student will be expected to obtain additional information as a guideline in planning his program.

CENTRAL MICHIGAN UNIVERSITY

The following are group classifications used at Central Michigan University and courses at Delta College which may be used to fill these requirements:

Group I — English, Languages, and Speech 12 Sem Hrs
English 111, English 112, Speech 112, and additional courses from Language, Literature, or Speech.

Group II — Science 12-18 Sem Hrs
Divided among at least two departments. Biology, Geology,

Mathematics, Physical Science, Physics, Chemistry, and in some curricula, Psychology.

Group III — Social Science 12 Sem Hrs
Divided among at least two departments. Economics, Geography, History, Philosophy, Sociology. Political Science 103 is required.

Group IV — Education — none taken at Delta.

Group V — Fine Arts
Art, Music. Number of credits dependent upon curriculum.

Group VI — Applied Arts
Number of credits dependent upon curriculum.

Group VII — Physical Education 4 Sem Hrs

FERRIS STATE COLLEGE

Group Requirements for a baccalaureate degree include the following:

Freshman English	6 Sem Hrs
Science	8 Sem Hrs
Social Science	6-12 Sem Hrs
Humanities	6-8 Sem Hrs

MICHIGAN TECHNOLOGICAL UNIVERSITY

Core Requirements for Engineering:

Mathematics	16 Sem Hrs
Chemistry	8 Sem Hrs
Physics	8 Sem Hrs
Engineering Science	3 Sem Hrs
General Studies	10 Sem Hrs
Humanities and Social Studies	15-30 Sem Hrs

Requirements vary among the engineering majors.
See catalog for core requirements for other curricula.

NORTHERN MICHIGAN UNIVERSITY

Course Requirements

Group I — Humanities 16 Sem Hrs
English, Speech, Art **Appreciation**, Music **Appreciation**,
Philosophy, Religion, History of Western Civilization,
and Humanities.

Group II — Mathematics and Natural Science 8 Sem Hrs
At least one laboratory science course in Chemistry,
Physics, or Biology, plus additional hours in any of
these areas or Mathematics. Students with less than
8 hours may take Common Learning 121 or additional
courses in the specific areas named.

Group III — Social Science 8 Sem Hrs
American Government and Sociology, Economics, Geog-
raphy, or Political Science.

Group IV — Foreign Language 8 Sem Hrs
OR
1 Senior Seminar
plus
1 Elective
(See N.M.U. Catalog)

SAGINAW VALLEY COLLEGE

The basic requirements for a degree program at Saginaw
Valley College may be met as follows:

Group I — Communication Area	9 Sem Hrs
English 111, 112	
Speech 111	
Group II — Humanities	8 Sem Hrs
Literature, Philosophy, Art 105, 151, 152, Music 111, 112, 121, Foreign Language	
Group III — Science Area	8 Sem Hrs
Biology 111, 112, Physical Science, Geography 111, Chemistry 111, Physics 111, (any two or a sequence of one science)	
Group IV — Social Science	8 Sem Hrs
History 111, 112, Political Science 103, 111, Sociology 211, Geography 113 or 211, Economics 221 or 222	
Group V — Physical Education	NONE
Electives — majors or minors (number depends upon cur- riculum).	
 EASTERN MICHIGAN UNIVERSITY	
Group requirements for a degree and the equivalent courses at Delta are:	
Group 1 — Language and Literature	14 Sem Hrs
English 111, English 112, Speech 112, Literature and Language.	
Group II — Science	12 Sem Hrs
Biological Sciences, Physical Science, Geography 111, Mathematics, Psychology 211.	
Group III — Social Science	12 Sem Hrs
History, Political Science, Philosophy, Economics, Sociology, Geography.	
Group IV — Education (for Teacher Education	20 Sem Hrs
only) None.	

Group V — Fine Arts — for some curricula	
Art, Music.	
Group VI — Practical Arts — for some curricula	
None.	
Group VII — Physical Education	4 Sem Hrs

MICHIGAN STATE UNIVERSITY

All degree student must complete four foundation courses. The Michigan State University and the Delta College equivalencies are listed below:

Group I — American Thought and Language	6 Sem Hrs
English 111, 112.	
Group II — Natural Science	8 Sem Hrs
Divided between the Biological Sciences and the Physical Sciences.	
Group III — Social Science	8 Sem Hrs
Divided among two or more subject matter departments.	
Economics 111, 112, 221, 222	
Geography 113 or 211	
Political Science 103, 111, 112	
Psychology 211, 223, 231	
Sociology 211, 212	
Group IV — Humanities	8 Sem Hrs
Divided among two or more departments.	
History	
English Literature	
Music 111, Art 151, 152	
Philosophy 211, 221	
Group V — Physical Education	2 Sem Hrs

Many of the curricula demand a year of college credit in a foreign language if an equivalent amount of high school language was not taken.

Note: Group requirements started at Delta should be completed prior to transfer.

UNIVERSITY OF MICHIGAN

Students planning to enroll in the College of Literature, Science and the Arts at the University of Michigan should complete as many as possible of the distribution courses listed below during their first two years.

Group I — English	6 Sem Hrs
English 111, 112	
Group II — Foreign Language	0 to 16 Sem Hrs
Fourth semester proficiency in one language.	
Group III — Social Sciences	14 Sem Hrs
Work in at least two departments including a two-semester sequence in one department. Not more than 8 semester hours in one department.	
Economics, Geography, History, Political Science, Psychology, Sociology.	
Group IV — Natural Science	12 Sem Hrs
Work in two departments including a two-semester sequence in a laboratory course in one group.	
I. Biological, Geological, and other Sciences.	
II. Chemistry and Physics.	
Group V — Humanities	12 Sem Hrs
A two-semester sequence in one group and one semester in another.	
I. Literature	
II. Fine Arts	
III. Philosophy	

A minimum of 40 hours of these requirements, including English and the language, must be completed during the Freshman and Sophomore years.

Note: The School of Education has a few variations in distribu-

tion requirements. The appropriate catalog should be consulted by education majors.

WAYNE STATE UNIVERSITY

The basic curriculum of the College of Liberal Arts and the Delta courses to fulfill these requirements are shown below. A student should check for specialized curricula as they vary from the general curriculum listed.

Group I — English and Literature	12 Sem Hrs
English 111, 112, and Literature electives.	
Group II — Foreign Language	0 to 20 Sem Hrs
Number of credits dependent upon high school language units.	
Group III — Natural Science	16 Sem Hrs
The laboratory science chosen may be determined somewhat according to the requirements of the major field.	
Must include one year's sequence in one science.	
Group IV — Social Science	12 Sem Hrs
Group V — Electives	18 Sem Hrs

WESTERN MICHIGAN UNIVERSITY

The basic requirements for a degree program at Western Michigan University may be met as follows:

Group I — Communication Area	6 Sem Hrs
English 111, 112	
Group II — Science Area	8 Sem Hrs
Must be divided between two or more departments: Biological Science, Geography 111, or a Physical Science.	
Group III — Social Science Area	8 Sem Hrs
Must be divided between two or more departments: History, Economics, Sociology. In addition, one semester of Political Science, which is not included in the 8 semester hours, is required.	

Group IV — Humanities Area 6 Sem Hrs
Must be divided between two departments or more. History 111, 112; Literature, Philosophy, Art, History, or Music Appreciation.

Group V — Physical Education 4 Sem Hrs

Note: Group requirements started at Delta should be completed before transferring.

GENERAL REQUIREMENTS

General requirements for certain curricula are listed in the following paragraphs. These requirements vary for different senior colleges and departmental majors. Students should obtain curriculum sheets for the program in which they are enrolling. Each student should follow the program for the senior college to which he plans to transfer.

Business Administration
Elementary Education
Secondary Education
Engineering
Liberal Arts

A variety of other transfer programs are offered. Some are: Agriculture, Art, Conservation, Dentistry, Journalism, Law, Library Science, Police Administration, Dental Hygiene, Medicine, Mortuary Science, Occupational Therapy, Optometry, Pharmacy, Physical Therapy, and Veterinary Science.

BUSINESS ADMINISTRATION

English 111, 112	6 Sem Hrs
Accounting 211, 212	8 Sem Hrs
Economics 221, 222	8 Sem Hrs
Science	4-8 Sem Hrs
Mathematics	3-8 Sem Hrs

Social Science	4-8 Sem Hrs
Humanities	0-9 Sem Hrs

ELEMENTARY EDUCATION

English 111, 112	6 Sem Hrs
Speech 112	3 Sem Hrs
English 251	3 Sem Hrs
Language	0-16 Sem Hrs
Social Science	8-15 Sem Hrs
Science	8-16 Sem Hrs
Humanities	0-12 Sem Hrs
Art Education	3-6 Sem Hrs
Music	3-6 Sem Hrs
Mathematics 110	3 Sem Hrs
Physical Education	2-4 Sem Hrs

Certain phases of Special Education for teaching the handicapped are obtained through this curriculum.

A special kind of opportunity exists on a cooperative basis between Delta College and Michigan State University through the Educational Intern Program in Elementary Education. All four years of training, with the exception of two summers on the MSU campus, can be completed at Delta or in the geographic area of the student's internship training. Additional information is available at the Student Services Office.

SECONDARY EDUCATION

English 111, 112	6 Sem Hrs
Speech 112	3 Sem Hrs
*Literature	3-12 Sem Hrs
Foreign Language	0-16 Sem Hrs
Science	8-12 Sem Hrs in two departments; At least one year of laboratory science is required.
Social Science	8-14 Sem Hrs

*Humanities	3-12 Sem Hrs
Physical Education	2-4 Sem Hrs

*Literature requirements usually included in Humanities group.

There are variations of this program for Business Education, Home Economics Education, Industrial Education, and some phases of teaching the handicapped.

ENGINEERING

English 111, 112	6 Sem Hrs
Chemistry	5-11 Sem Hrs
Physics 211, 212, 215	13 Sem Hrs
*Mathematics 161, 162, 261, 262	16 Sem Hrs
Economics 211, 212, 221, 222	8 Sem Hrs
Drafting 155, 156	6 Sem Hrs
Political Science	3 Sem Hrs
Humanities	3-8 Sem Hrs

*Placement in the beginning course of this sequence depends upon prior courses in mathematics and scores on placement tests.

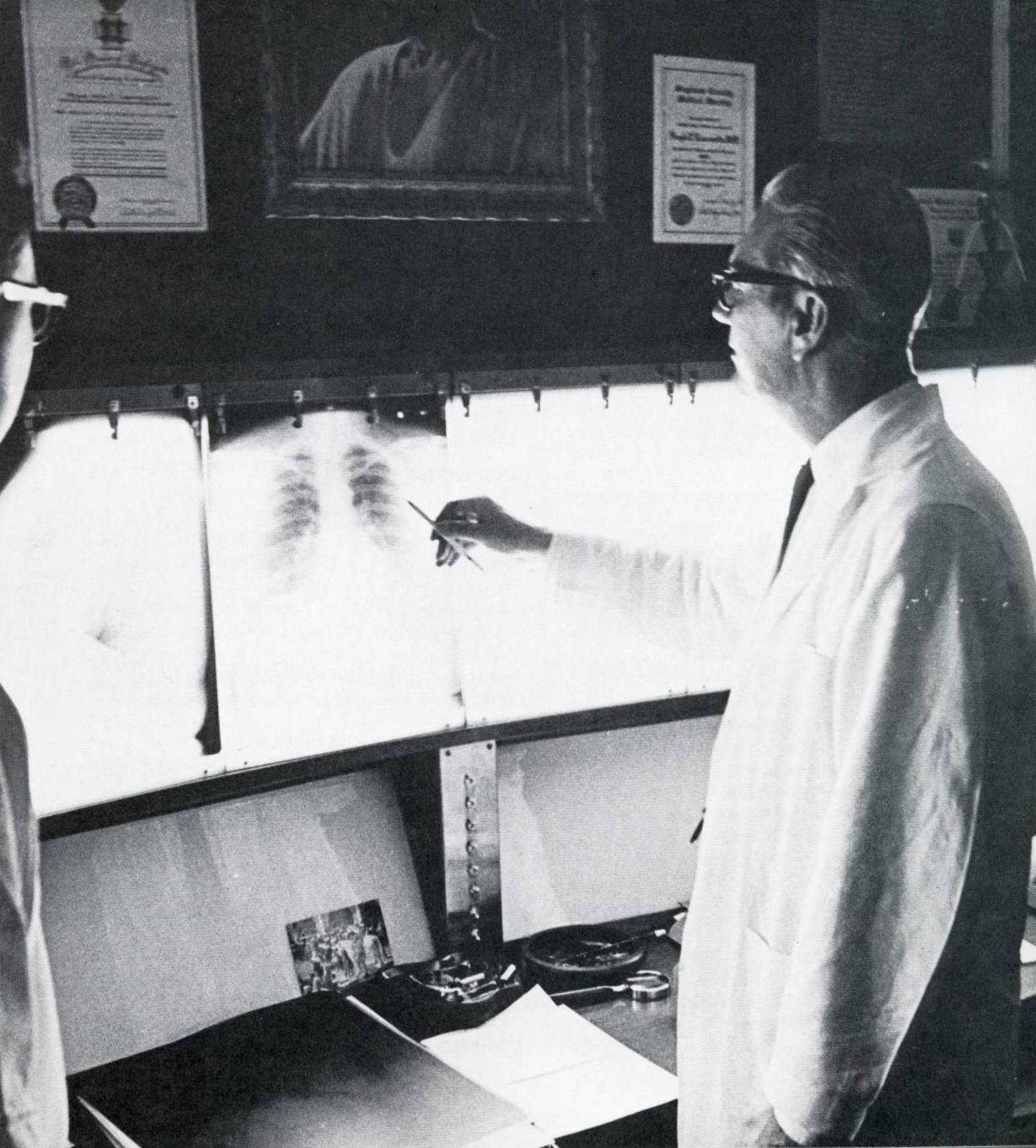
LIBERAL ARTS — B.A. DEGREE

For students interested in preparing for Law, Social Work, Library Science, Linguistics, and similar fields.

English 111, 112	6 Sem Hrs
Speech 112	3 Sem Hrs
Language	8-16 Sem Hrs
*Literature	5-12 Sem Hrs
Social Science	12-16 Sem Hrs
Science	12-18 Sem Hrs
*Humanities	5-12 Sem Hrs
Physical Education	2-4 Sem Hrs

*Literature requirements usually included in Humanities group.

The minimum number of credits in some groups may be greater than listed above depending upon department major.



CAREER PROGRAMS AND COURSE DESCRIPTIONS

CAREER PROGRAMS

In addition to the transfer programs listed, Pages 33 to 37, Delta College offers many career programs, listed prior to course descriptions throughout the following pages.

COURSE DESCRIPTIONS

Courses in a particular subject field are distinguished by identifying numbers and course titles. The credit value of each course is indicated in semester hours following the title of the course.

Below the course title the number which previously identified the course in the April 1963 issue of the Delta College Bulletin is given. Where no such notation appears, the number of the course has not been changed.

The course numbering system is as follows:

1. Courses numbered below 100 carry service credit only, not college credit, and are usually not transferable to other colleges.

2. Courses numbered above 100 are college credit courses, however, not all such courses are applicable to baccalaureate degree programs. (See Programs of Study Section).

3. Courses numbered above 200 are intended chiefly for sophomores but may be elected by freshmen in some cases.

Those courses which have definite prerequisites are so indicated, otherwise there is no prerequisite.

The first number in parentheses following the course description indicates the number of lecture hours per week, and

the second number indicates the number of laboratory hours per week.

Most of the courses listed will be offered during a complete academic year. A schedule of Classes is issued in March for the following Spring and Fall semesters, and in October for the following Winter semester.

If the student needs additional information regarding courses or transfer credit he should consult his adviser or the Student Services Office.

Career programs and course descriptions are arranged according to the division of the college responsible for the instruction. However, subject matter fields do not usually have the same name as the division which offers them. Subject matter groupings under each division are arranged in alphabetical order as follows:

Business Division	Humanities Division
Accounting	Art
Cooperative Education	Library Science
Data Processing	Music
Distributive Education	Philosophy
General Business	Radio-Television
Secretarial Science	Languages
Business Machines	French
English Division	German
Health, Physical Education and	Russian
Recreation Division	Spanish
Activity Courses	Mathematics Division
Theory Courses	

Nursing Division	
Nursing	
Radiologic Technology	
Science Division	
Agriculture	
Aviation	
Basic Science	
Biology	
Chemistry	
Geography	
Geology	
Physical Science	
Physics	

Social Science Division	
Economics	
History	
Law Enforcement	
Political Science	
Psychology	
Sociology	
Technical Division	
Architecture	
Automotive	
Drafting	
Electronic Technology	
Mechanical Technology	

BUSINESS DIVISION

Division Chairman — Dale F. Keyser, Assistant Professor

Associate Professor

Floyd A. Feusse
Frances B. Gainey
Marjorie H. Leeson
Aline A. Lynch

Assistant Professor

Richard J. Ferrando
William R. Hieber
Isaac W. J. Keim, III
Robert N. Lees
Donna M. McCloy
Dennis E. McNeal

Instructor

James A. Christensen
Gayle D. Ewing
Peggy Hammontree
Craig M. Hazan
Dareld M. Herod
Carol A. Jacobs
Mary E. Smith

BUSINESS ADMINISTRATION TRANSFER PROGRAMS

Business Administration students prepare for business, industrial, and community leadership. Professional goals in business may be directed toward specialized areas: accounting, retailing, finance, marketing, insurance, real estate, secre-

tarial administration, and public administration. The two-year sequence of courses provides general background principles of business, and some of the tool subjects. A transfer student may follow various programs of specialization. The student is urged to secure the catalogue of the senior college of his choice and plan his course carefully in conference with his adviser.

BUSINESS CAREER PROGRAMS

The Business Education Division is vocational in its aims and objectives. It provides the following educational opportunities:

I. For an Associate Degree leading to a Baccalaureate Degree in

(a) Business Administration or Applied Science, for employment in such fields as accounting, advertising, banking, finance, hotel management, insurance, law, marketing, personnel, real estate, secretarial, and transportation;

(b) Business Education in preparation for teaching office, general business, or distributive education courses; and with additional degrees, for teaching, coordinating, or administrative duties in colleges and universities.

II. For Business Careers, with an Associate Degree in Business Studies.

Business subjects and related courses in communications, mathematics, science economics, history, government, and physical education, prepare the student for employment in business and commercial occupations. There are excellent positions open to community college graduates. Courses of study are planned in areas where job opportunities clearly exist. These offerings are modified from time to time as the needs of the communities change. Emphasis is placed on assisting the student in choosing a curriculum to meet vocational requirements, in accordance with his interest and aptitudes. Some suggestions are printed here for general information; however, each student plans, with his adviser, a sequence of studies to fit his individual needs.

Cooperative Occupational Education. This is a method by which a student may apply learned skills, principles, and concepts in the role of an actual paid on-the-job learning worker. The selected training station supervisor works with the student to help develop occupational competence in an occupational area

that is directly related to the students career goal and the curriculum that he or she has chosen. This learning experience of a least 15 hours per week in a real-life job and one hour per week in a co-op class is supervised by a state certified coordinator. Three credits per semester are earned by the co-op student for successfully meeting all requirements.

Students who are interested in cooperative education may make formal application in the co-operative education office in the "J" wing.

In addition to these two regular groups, the Business Education Division welcomes those students who do not wish to complete degree requirements, who desire to take single course, or a series of courses, in the Day or Evening College, to fulfill their particular requirements. Many students find themselves in circumstances that do not permit a full two-year program.

ACCOUNTING CURRICULUM

First Semester	Sem Hrs
General Business 151 — Business Communications	3
Accounting 111 — Introductory Accounting	3
Economics 111 — Essentials of Economics	3
Business Machines 171 or 172 — Beginning Typewriting or Intermediate Typewriting	2
Business Machines 175 — Machine Calculation	2
General Business 153 — Business Organization	3
	16 Hrs

Second Semester	Sem Hrs
General Business 152 — Business Communications	3
Accounting 112 — Introductory Accounting	3
Economics 112 — Essentials of Economics	3
Mathematics 105 — Business Computation or Elective	3
Data Processing 133 — Introduction to Data Processing	3
PE — Physical Education	1
	16 Hrs

Third Semester	Sem Hrs
Accounting 213 — Cost Accounting	3
Data Processing 235 — Data Processing Applications	3
General Business 251 — Business Law	3
Political Science 103 — Introduction to American Government	3
Speech 112 — Principles of Public Speaking	3
General Business 155-156 — Filing or Filing and Records Management	1
	17 Hrs

Fourth Semester	Sem Hrs
Accounting 215 — Federal Tax Accounting	3
Accounting 217 or 113 — Auditing Theory and Procedure or Social Security and Payroll Accounting	3
General Business 255 — Office Management	3
General Business 252 — Business Law	3
Mathematics 108 — Elementary Statistics or Elective	3
PE — Physical Education	1
	16 Hrs

ADVERTISING CURRICULUM

First Semester	Sem Hrs
General Business 151 — Business Communications	3
Business Machines 171 or 172 — Beginning Typewriting or Intermediate Typewriting	2
General Business 153 — Business Organization	3
General Business 155 and 156 — Filing and Filing and Records Management	2
Economics 111 — Essentials of Economics	3
Speech 112 — Principles of Public Speaking	3
PE — Physical Education	1
	17 Hrs

Second Semester	Sem Hrs
General Business 152 — Business Communications	3
Distributive Education 145 — Sales	3
Art 111 — Basic Freehand Drawing	3
Economics 112 — Essentials of Economics	3
Political Science 103 — Introduction to American Government	3
Physical Education — Physical Education	1
	16 Hrs

Third Semester	Sem Hrs
Distributive Education 143 — Advertising	3
General Business 251 — Business Law	3
Distributive Education 243 — Marketing	3
Art 115 — Basic Design — Two Dimensional	3
Psychology 211 — General Psychology	4
	16 Hrs

Fourth Semester	Sem Hrs
Accounting 111 — Introductory Accounting	3
Data Processing 133 — Introduction to Data Processing	3
Secretarial Science 261 or General Business 255 — Secretarial Practices or Office Management	3
Art 116 — Three Dimensional	3
English 115 — Basic Journalism Skills	2
Sociology 211 — Principles of Sociology	3
	17 Hrs

AIR LINE HOSTESS CURRICULUM

This may be a one or two year course, which must be followed by short, intensive training of a few weeks either at a school operated by an airline or by one specializing in airline operations.

The following program recommended by a national airline is characteristic of suggestions made by other airlines.

Qualifications:

Age: 20 to 28

Marital Status: Single

Height: 5'2" to 5'7"

Weight: 130 pounds maximum in proportion to height

Attractive appearance and personality

Visual Acuity: 20/30 without corrective lenses

Suggested Preparatory Courses:

English, Psychology, Public Speaking, Sociology

Hygiene, Physiology

Languages

Music, Art

Geography, Political Science

Physical Education

The same airline states: If selected, the applicant will attend a training school, during which time she will be furnished room, board, and classroom equipment. Upon successful completion of the training program, she will be considered for employment and, if accepted, will be assigned a base station.

AIRLINE HOSTESS — CLERICAL CURRICULUM

First Semester

Sem Hrs

English 111 or General Business 151 —

 Freshman Composition or Business Communications 3

Business Machines 171 or 172 — Beginning Typewriting or

 Intermediate Typewriting 2

Economics 111 — Essentials of Economics 3

Humanities or Foreign Language 3, 4

Business Machines 175 — Machine Calculation 2

General Business 155 — Filing 1

PE — Physical Education 1

15, 16 Hrs

Second Semester

Sem Hrs

English 112 or General Business 152 —

 Freshman Composition or Business Communications 3

Mathematics 105 — Business Computation 3

Economics 112 — Essentials of Economics 3

Humanities or Foreign Language 3, 4

Speech 112 — Principles of Public Speaking 3

15, 16 Hrs

Third Semester

Sem Hrs

Biology 113 — Personal Health 4

Geography 113 — World Regional Geography 4

Psychology 211 — General Psychology 4

Sociology 211 — Principles of Sociology 3

PE — Physical Education 1

16 Hrs

Fourth Semester

Sem Hrs

Accounting 111 — Introductory Accounting 3

General Business 156 — Filing and Records Management 1

Secretarial Science 261 or General Business 255 —

 Secretarial Practices or Office Management 3

Data Processing 133 — Introduction to Data Processing 3

Political Science 103 — Introduction to American Government 3

Sociology 212 — Social Problems 3

16 Hrs

BUILDING MATERIALS MANAGEMENT

First Semester

Sem Hrs

Accounting 111 — Introductory Accounting 3

Business Machines 175 — Machine Calculation 2

General Business 153 — Business Organization 3

Economics 111 — Essentials of Economics 3

Mathematics 105 — Business Computation 3

English 111 — Freshman Composition 3

17 Hrs

Second Semester

Sem Hrs

Accounting 112 — Introductory Accounting 3

Distributive Education 145 — Sales 3

Economics 112 — Essentials of Economics 3

English 112 — Freshman Composition 3

Speech 112 — Principles of Public Speaking 3

PE — Physical Education 1

16 Hrs

	Sem Hrs
Third Semester	
Distributive Education 243 — Marketing	3
Distributive Education 247 — Problems of Retail Merchandising	3
General Business 151 — Business Communications	3
Architectural Technology 101 — Materials	3
Architectural Technology 111 — Mechanical and Electrical Equipment for Buildings	4
PE — Physical Education	1
	17 Hrs

	Sem Hrs
Fourth Semester	
Accounting 213 — Cost Accounting	3
Architectural Technology 105 — Architectural Drafting I	5
Data Processing 133 — Introduction to Data Processing	3
General Business 255 — Office Management	3
Elective	3
	17 Hrs

	Sem Hrs
Fifth Semester	
Architectural Technology 106 — Architectural Drafting II	5
Distributive Education 245 — Buying and Store Management	3
Political Science 103 — Introduction to American Government	3
Architectural Technology 203 — Estimating	3
Elective	3
	17 Hrs

BUSINESS MANAGEMENT CURRICULUM

	Sem Hrs
First Semester	
General Business 151 — Business Communications	3
Business Machines 171 or 172 — Beginning Typewriting or Intermediate Typewriting	2
Accounting 111 — Introductory Accounting	3
General Business 153 — Business Organization	3
Economics 111 — Essentials of Economics	3
Mathematics 119 or 105 — Intermediate Algebra or Business Computation	3
	17 Hrs

	Sem Hrs
Second Semester	
General Business 152 — Business Communications	3
Accounting 112 — Introductory Accounting	3
General Business 155 — Filing	1
Distributive Education 143 — Advertising	3
Economics 112 — Essentials of Economics	3
Mathematics 108 — Elementary Statistics or Elective	3
PE — Physical Education	1
	17 Hrs

	Sem Hrs
Third Semester	
Accounting 213 — Cost Accounting	3
Distributive Education 141 — Transportation and Traffic Management	3
Data Processing 133 — Introduction to Data Processing	3
General Business 251 — Business Law	3
Speech 112 — Principles of Public Speaking	3
General Business 156-157 — Filing and Records Management and Advanced Filing and Records Management	2
	17 Hrs

	Sem Hrs
Fourth Semester	
Distributive Education 145 — Sales	3
Secretarial Science 261 or General Business 255 — Secretarial Practices or Office Management	3
General Business 252 — Business Law	3
Distributive Education 243 — Marketing	3
Political Science 103 — Introduction to American Government	3
PE — Physical Education	1
	16 Hrs

DATA PROCESSING

	Sem Hrs
First Semester	
Data Processing 133 — Introduction to Data Processing	3
Accounting 211 — Principles of Accounting	4
Mathematics 119, 122, or 131* — Intermediate Algebra, College Algebra, or Introductory College Mathematics	3
English 111 — Freshman Composition	3
Business Machines 171, 172, or 175** — Beginning Typewriting, Intermediate Typewriting, or Machine Calculation	2
PE — Physical Education	1
	16 Hrs

	Sem Hrs
Second Semester	
Data Processing 134 — Data Processing Machine Operations	3
Accounting 212 — Principles of Accounting	4
Mathematics 108 — Elementary Statistics	3
English 112 — Freshman Composition	3
Business Machines 179*** — Key Punching and Verifying	2
PE — Physical Education	1
	16 Hrs

	Sem Hrs
Third Semester	
Data Processing 235 — Data Processing Applications	2
Data Processing 238 or 245 — Computer Programming or COBOL Programming	3
Accounting 213 — Cost Accounting	3
Economics 221 — Principles of Economics	4
PE — Physical Education	1
	16, 17 Hrs

Fourth Semester		Sem Hrs
Data Processing 239 or 246 — Computer Programming or PL/I Programming	3	
Political Science 103 — Introduction to American Government	3	
Distributive Education 243 — Marketing	3	
Economics 222 — Principles of Economics	4	
Elective in Science or Humanities	3, 4	
	16, 17 Hrs	

DATA PROCESSING

Delta College suggested courses for transfer to Ferris State College

First Semester		Sem Hrs
Data Processing 133 — Introduction to Data Processing	3	
Accounting 211 — Principles of Accounting	4	
Mathematics 122* — College Algebra	3	
English 111 — Freshman Composition	3	
Political Science 103 — Introduction to American Government	3	
PE — Physical Education	1	
	17 Hrs	

Second Semester		Sem Hrs
Data Processing 239 (360 BAL) — Computer Programming	3	
Accounting 212 — Principles of Accounting	4	
English 112 — Freshman Composition	3	
Physical Science 101 — Physical Science	4	
PE — Physical Education	1	
	16 Hrs	

Third Semester		Sem Hrs
Data Processing 235 — Data Processing Applications	3	
Data Processing 245 (COBOL) — COBOL Programming	3	
General Business 251 — Business Law	3	
Economics 221 — Principles of Economics	4	
History 221 or 222 — History of the United States from 1865 to the Present or History of Russia	3	
	16 Hrs	

Fourth Semester		Sem Hrs
Data Processing 243 or 246 — Report Program Generator Programming or PL/I Programming	2, 3	
General Business 252 — Business Law	3	
Economics 222 — Principles of Economics	4	
Biology 111 or Physical Science 102 — Principles of Biology or Physical Science	4	
Sociology 211 — Principles of Sociology	3	
	16, 17 Hrs	

FINANCE AND BANKING

First Semester		Sem Hrs
Accounting 111 — Introductory Accounting	3	
Cooperative Education 121 — Cooperative Education	3	
Economics 111 — Essentials of Economics	3	
English 111 — Freshman Composition	3	
Mathematics 105 — Business Computation	3	
PE — Physical Education	1	
	16 Hrs	

Second Semester		Sem Hrs
Accounting 112 — Introductory Accounting	3	
Cooperative Education 122 — Cooperative Education	3	
General Business 253 — Credits and Collections	3	
General Business 153 — Business Organization	3	
Speech 112 — Principles of Public Speaking	3	
PE — Physical Education	1	
	16 Hrs	

Third Semester		Sem Hrs
Accounting 213 — Cost Accounting	3	
Cooperative Education 221 — Cooperative Education	3	
Data Processing 133 — Introduction to Data Processing	3	
General Business 251 — Business Law	3	
Economics — Money and Banking	3	
	15 Hrs	

Fourth Semester		Sem Hrs
Accounting 217 — Auditing Theory and Practice	3	
Cooperative Education 222 — Cooperative Education	3	
Data Processing 235 — Data Processing Accounting Applications	3	
General Business 151 — Business Communications	3	
General Business 252 — Business Law	3	
	15 Hrs	

Fifth Semester		Sem Hrs
General Business 152 — Business Communications	3	
Philosophy 211 — Introduction to Philosophy	3	
Political Science 103 — Introduction to American Government	3	
General Business — Corporate Finance	3	
	12 Hrs	

GENERAL ADMINISTRATION CURRICULUM

First Semester		Sem Hrs
English 111 — Freshman Composition	3	
Economics 111 — Essentials of Economics	3	
General Business 153 or Business Machines 171 — Business Organization or Beginning Typewriting	2, 3	
Accounting 211 — Principles of Accounting	4	
Mathematics 105 — Business Computation	3	
PE — Physical Education	1	
	16, 17 Hrs	

Second Semester	Sem Hrs
English 112 — Freshman Composition	3
Economics 112 — Essentials of Economics	3
General Business 153 or Political Science 103 —Business Organization or Introduction to American Government	3
Accounting 212 — Principles of Accounting	4
Speech 112 — Principles of Public Speaking	3
PE — Physical Education	1
	17 Hrs

Third Semester	Sem Hrs
Distributive Education 145 — Advertising	3
Distributive Education 243 — Marketing	3
General Business 151 — Business Communications	3
Accounting 213 — Cost Accounting	3
Philosophy 211 — Introduction to Philosophy	3
General Business 155 and 156 — Filing and Filing and Records Management	2
	17 Hrs

Fourth Semester	Sem Hrs
Data Processing 133 — Introduction to Data Processing	3
Distributive Education 141 — Transportation and Traffic Management	3
General Business 255 — Office Management	3
Distributive Education 143 — Advertising	3
Purchase and Materials Management*	3
	15 Hrs

Fifth Semester	Sem Hrs
Distributive Education 142 — Transportation and Traffic Management	3
General Business 252 — Business Law	3
Data Processing 235 — Data Processing Applications	3
Accounting 217 — Auditing Theory and Practice	3
General Business 253 — Credit and Collections	3
English 211 — Advanced Composition	3
	18 Hrs

GENERAL BUSINESS CURRICULUM

First Semester	Sem Hrs
General Business 151 — Business Communications	3
Accounting 111 — Introductory Accounting	3
Business Machines 171 or 172 — Beginning Typewriting or Intermediate Typewriting	2
Business Machines 175 — Machine Calculation	2
Economics 111 — Essentials of Economics	3
Mathematics 105 — Business Computation	3
PE — Physical Education	1
	17 Hrs

Second Semester	Sem Hrs
General Business 152 — Business Communications	3
Accounting 112 — Introductory Accounting	3
General Business 155 — Filing	1
General Business 153 — Business Organization	3
Economics 112 — Essentials of Economics	3
Political Science 103 — Introduction to American Government	3
PE — Physical Education	1
	17 Hrs

Third Semester	Sem Hrs
Accounting 113 — Social Security and Payroll Accounting	3
Distributive Education 141 — Transportation and Traffic Management	3
Distributive Education 145 — Sales	3
General Business 251 — Business Law	3
Data Processing 133 — Introduction to Data Processing	3
	15 Hrs

Fourth Semester	Sem Hrs
Distributive Education 143 — Advertising	3
General Business 255 — Office Management	3
Data Processing 235 — Data Processing Applications	3
Distributive Education 243 — Marketing	3
Speech 112 — Principles of Public Speaking	3
	15 Hrs

RETAILING OR SALESMANSHIP CURRICULUM

First Semester	Sem Hrs
General Business 151 — Business Communications	3
Accounting 111 — Introductory Accounting	3
Business Machines 171 or 172 — Beginning Typewriting or Intermediate Typewriting	2
Economics 111 — Essentials of Economics	3
Geography 113 — World Regional Geography	4
PE — Physical Education	1
	16 Hrs

Second Semester	Sem Hrs
General Business 152 — Business Communications	3
Accounting 112 — Introductory Accounting	3
General Business 153 — Business Organization	3
Distributive Education 145 — Sales	3
Political Science 103 — Introduction to American Government	3
PE — Physical Education	1
	16 Hrs

Third Semester	Sem Hrs
Distributive Education 143 — Advertising	3
Art 115 — Basic Design — Two Dimensional	3
Mathematics 105 — Business Computation	3
Psychology 101 — Applied Psychology	3
Data Processing 133 — Introduction to Data Processing	3
General Business 155 and 156 — Filing and Filing and Records Management	2
	17 Hrs

Fourth Semester	Sem Hrs
General Business 255 — Office Management	3
General Business 251 — Business Law	3
Distributive Education 243 — Marketing	3
Art 116 — Three Dimensional	3
Speech 112 — Principles of Public Speaking	3
Business Machines 175 — Machine Calculation	2
	17 Hrs

RETAILING AND MID-MANAGEMENT CURRICULUM

Fall Semester	Sem Hrs
General Business 151 — Business Communications	3
Accounting 111 — Introductory Accounting	3
Business Machines 171 or 172 — Beginning Typewriting or Intermediate Typewriting	2
General Business 153 — Business Organization	3
Cooperative Distributive Education 125 — Cooperative Distributive Education	3
PE — Physical Education	1
	15 Hrs

Winter Semester	Sem Hrs
General Business 152 — Business Communications	3
Accounting 112 — Introductory Accounting	3
Distributive Education 145 — Sales	3
Economics 111 — Essentials of Economics	3
Cooperative Distributive Education 126 — Cooperative Distributive Education	3
PE — Physical Education	1
	16 Hrs

Spring 7½ Week Semester	Sem Hrs
Distributive Education 247 — Principles of Retailing	3
General Business 155, 156 — Filing and Filing and Records Management	2
Cooperative Distributive Education 225 — Cooperative Distributive Education	3
(15 weeks)	8 Hrs

Summer 7½ Week Semester	Sem Hrs
Distributive Education 143 — Advertising	3
Business Machines 175 — Machine Calculations	2
Cooperative Distributive Education — (15 weeks — see above)	5 Hrs

Fall Semester	Sem Hrs
Speech 102 or 112 — Business and Professional Speech or Principles of Public Speaking	2, 3
General Business 253 — Credit and Collection	3
Distributive Education 243 — Principles of Marketing	3
Cooperative Distributive Education 266 — Cooperative Distributive Education	3
General Business 255 — Office Management	3
	14, 15 Hrs

Winter Semester	Sem Hrs
Mathematics 105 — Business Computation	3
Data Processing 133 — Introduction to Data Processing	3
Distributive Education 245 — Principles of Management	3
Political Science 103 — Introduction to American Government	3
Psychology 101 — Applied Psychology	3
	15 Hrs

SECRETARIAL CURRICULUM

First Semester	Sem Hrs
General Business 151 — Business Communications	3
Accounting 111 — Introductory Accounting	3
Secretarial Science 161* — Beginning Shorthand	4
Business Machines 171* — Beginning Typewriting	2
Economics 111 — Essentials of Economics	3
PE — Physical Education	1
	16 Hrs

Second Semester	Sem Hrs
General Business 152 — Business Communications	3
Data Processing 133 — Introduction to Data Processing	3
Secretarial Science 162 — Intermediate Shorthand	4
Business Machines 172 — Intermediate Typewriting	2
Political Science 103 — Introduction to American Government	3
PE — Physical Education	1
	16 Hrs

Third Semester	Sem Hrs
Secretarial Science 163 — Dictation and Transcription	4
Business Machines 173 — Advanced Typewriting	2
General Business 155, 156, 157 — Filing, Filing and Records Management, Advanced Filing and Records Management	3
Business Machines 175 — Machine Calculation	2
Psychology 211 — General Psychology	4
	15 Hrs

Fourth Semester		Sem Hrs
Accounting 113 — Social Security and Payroll Accounting	3	
Secretarial Science 164 — Speed Building and Specialized Shorthand	3	
Secretarial Science 261 — Secretarial Practices	3	
Business Machines 174 — Voice Transcription and Copying Machine Procedures	2	
Mathematics 105 — Business Computation	3	
Speech 112 — Principles of Public Speaking	3	
	17 Hrs	

CHEMICAL SECRETARIAL CURRICULUM

First Semester		Sem Hrs
General Business 151 — Business Communications	3	
Secretarial Science 161* — Beginning Shorthand	4	
Economics 111 — Essentials of Economics	3	
Mathematics 119 — Intermediate Algebra	3	
Speech 112 — Principles of Public Speaking	3	
PE — Physical Education	1	
	17 Hrs	

Second Semester		Sem Hrs
General Business 152 — Business Communications	3	
Secretarial Science 162* — Intermediate Shorthand	4	
General Business 155 and 156 — Filing and Filing and Records Management	2	
Chemistry	4	
Business Machines 172 — Intermediate Typewriting	2	
PE — Physical Education	1	
	16 Hrs	

Third Semester		Sem Hrs
Business Machines 173 or 174 — Advanced Typewriting or Voice Transcription and Copying Machine Procedure	2	
Secretarial Science 163 — Dictation and Transcription	4	
Business Machines 175 — Machine Calculation	2	
General Business 157 — Advanced Filing and Records Management	1	
Chemistry 101 or 102 — General Chemistry or General Chemistry	4	
Political Science 103 — Introduction to American Government	3	
	16 Hrs	

Fourth Semester		Sem Hrs
Secretarial Science 164 (Chemical) — Speed Building and Specialized Shorthand	3	
Secretarial Science 261 — Secretarial Practices	3	
Data Processing 133 — Introduction to Data Processing	3	
Accounting 111 — Introductory Accounting	3	
Psychology 211 — General Psychology	4	
	16 Hrs	

LEGAL SECRETARIAL CURRICULUM

First Semester		Sem Hrs
General Business 151 — Business Communications	3	
Accounting 111 — Introductory Accounting	3	
Business Machines 171* — Beginning Typewriting	2	
Secretarial Science 161* — Beginning Shorthand	4	
Economics 111 — Essentials of Economics	3	
PE — Physical Education	1	
	16 Hrs	

Second Semester		Sem Hrs
General Business 152 — Business Communications	3	
Business Machines 172* — Intermediate Typewriting	2	
Secretarial Science 162* — Intermediate Shorthand	4	
Data Processing 133 — Introduction to Data Processing	3	
Business Machines 175 — Machine Calculation	2	
General Business 155 — Filing	1	
PE — Physical Education	1	
	16 Hrs	

Third Semester		Sem Hrs
Mathematics 105 — Business Computation	3	
Business Machines 173 or 174 — Advanced Typewriting or Voice Transcription and Copying Machine Procedures	2	
Secretarial Science 163 — Dictation and Transcription	4	
General Business 156 and 157 — Filing Records Management and Advanced Filing and Records Management	2	
General Business 251 — Business Law	3	
Speech 112 — Principles of Public Speaking	3	
	17 Hrs	

Fourth Semester		Sem Hrs
Secretarial Science 261 — Secretarial Practices	3	
Secretarial Sciences 164 (Legal) — Speed Building and Specialized Shorthand	3	
General Business 252 — Business Law	3	
Political Science 103 — Introduction to American Government	3	
Psychology 211 — General Psychology	4	
	16 Hrs	

MEDICAL ASSISTANTS CURRICULUM

First Semester		Sem Hrs
General Business 151 — Business Communications	3	
Secretarial Science 161 — Beginning Shorthand	4	
Secretarial Science 165 — Orientation to Medical Office Work	1	
Health 171 — Personal Health	3	
Speech 112 — Principles of Public Speaking	3	
Business Machines 175 — Machine Calculation	2	
PE — Physical Education	1	
	17 Hrs	

Second Semester	Sem	Hrs
General Business 152 — Business Communications	3	
Business Machines 172 — Intermediate Typewriting	2	
Secretarial Science 161 — Intermediate Shorthand	4	
Mathematics 105 — Business Computation	3	
Secretarial Science 166 — Orientation to Community Health Services	1	
Biology 111 — Principles of Biology	4	
		17 Hrs

Third Semester	Sem	Hrs
Secretarial Science 164 (Medical) or Business Machines 174 — Speed Building and Specialized Shorthand or Voice Transcription and Copying Machine Procedures	3, 2	
Cooperative Education 121 — Cooperative Office Education	3	
Secretarial Science 265 — Nursing Arts	3	
Psychology 211 — General Psychology	3	
General Business 155, 156, 157 — Filing, Filing and Records Management, Advanced Filing and Records Management	3	
		16, 15 Hrs

Fourth Semester	Sem	Hrs
Accounting 111 — Introductory Accounting	3	
Secretarial Science 261 — Secretarial Practices	3	
Cooperative Education 122 — Cooperative Office Education	3	
Secretarial Science 266 — Orientation to the Medical Laboratory	3	
Political Science 103 — Introduction to American Government	3	
PE — Physical Education	1	
		16 Hrs

SMALL BUSINESS MANAGEMENT CURRICULUM

First Semester	Sem	Hrs
General Business 151 — Business Communications	3	
Accounting 111 — Introductory Accounting	3	
Business Machines 171 or 172 — Beginning Typewriting or Intermediate Typewriting	2	
Business Machines 175 — Machine Calculation	2	
Economics 111 — Essentials of Economics	3	
Mathematics 105 — Business Computation	3	
PE — Physical Education	1	
		17 Hrs

Second Semester	Sem	Hrs
General Business 152 — Business Communications	3	
Accounting 112 — Introductory Accounting	3	
General Business 153 — Business Organization	3	
Distributive Education 145 — Sales	3	
Economics 112 — Essentials of Economics	3	
PE — Physical Education	1	
		16 Hrs

Third Semester	Sem	Hrs
Accounting 113 — Social Security and Payroll Accounting	3	
General Business 155 — Filing	1	
Distributive Education 143 — Advertising	3	
Political Science 103 — Introduction to American Government	3	
Psychology 211 — General Psychology	4	
Speech 112 — Principles of Public Speaking	3	
		17 Hrs

Fourth Semester	Sem	Hrs
General Business 156 and 157 — Filing and Records Management and Advanced Filing and Records Management	2	
General Business 255 — Office Management	3	
General Business 251 — Business Law	3	
General Business 253 — Credit and Collections	3	
Distributive Education 243 — Marketing	3	
Distributive Education 245 — Buying and Store Management	3	
		17 Hrs

TRANSPORTATION AND TRAFFIC MANAGEMENT CURRICULUM

First Semester	Sem	Hrs
General Business 151 — Business Communications	3	
Accounting 111 — Introductory Accounting	3	
Business Machines 171 or 172 — Beginning Typewriting or Intermediate Typewriting	2	
Distributive Education 141 — Transportation and Traffic Management	3	
Economics 111 — Essentials of Economics	3	
Business Machines 175 — Machine Calculation	2	
PE — Physical Education	1	
		17 Hrs

Second Semester	Sem	Hrs
General Business 152 — Business Communications	3	
Accounting 112 — Introductory Accounting	3	
Distributive Education 142 — Transportation and Traffic Management	3	
General Business 155 — Filing	1	
Economics 112 — Essentials of Economics	3	
Speech 112 — Principles of Public Speaking	3	
PE — Physical Education	1	
		17 Hrs

Third Semester	Sem	Hrs
General Business 156 — Filing and Records Management	1	
General Business 153 — Business Organization	3	
Distributive Education 241 — Transportation and Traffic Management	3	
Data Processing 133 — Introduction to Data Processing	3	
Distributive Education 243 — Marketing	3	
Mathematics 105 — Business Computation	3	
		16 Hrs

Fourth Semester	Sem Hrs
Distributive Education 242 — Transportation and Traffic Management	3
General Business 255 — Office Management	3
General Business 251 — Business Law	3
Geography 113 — World Regional Geography	4
Political Science 103 — Introduction to American Government	3
	16 Hrs

ACCOUNTING

Acctg 111 Introductory Accounting 3 Sem Hrs
 Introduces concepts of accounting as related to the double entry process or recording data in various journals, posting to general and special ledgers, preparation of worksheet and periodic financial statements. Elements studied are assets, liabilities, proprietorship, income, expense, depreciation. Accruals, deferrals, and adjustments are also covered. Completion of a practice set is required. (3-0)

Acctg 112 Introductory Accounting 3 Sem Hrs
 Prerequisite: Accounting 111. Includes the voucher system; payroll, sales, property and income taxes; partnership formation and procedures; corporate formation, records, surplus, dividends, stocks and bonds; departmental accounting; introduction to manufacturing and cost accounting. (3-0)

Note: Credit will not be given for both Accounting 111 and 211, or Accounting 112 and 212.

Acctg 113 Social Security and Payroll Accounting 3 Sem Hrs
 Prerequisite: Accounting 111 or Accounting 211. Considers Federal Social Security Laws and State Unemployment Compensation laws as applied to business. Automated payroll machines and systems are introduced. A brief survey of other Michigan tax laws is included. (3-0)

Acctg 211 Principles of Accounting 4 Sem Hrs
 Approaches accounting theory and procedures through proprietary, partnership and corporate entities, with emphasis on the latter. Concepts include recording, posting, and worksheet preparation of financial data; written presentation of financial statements to management. Journalizing illustrates debit-credit relationships, understanding of accruals, deferrals, adjusting

and reversing entries. Various receivables, depreciation, and inventory valuations are covered. A practice set is completed. (4-1)

Acctg 212 Principles of Accounting 4 Sem Hrs
 Prerequisite: Accounting 211. Deals with management's utilization of accounting knowledge and control procedures. Topics studied are: manufacturing operations, cost accounting, price-level changes and supplementary statements, cost data and management needs, budgeting and profit planning, cash-flow statements and cash forecasting, and the importance of income tax considerations. Machine accounting is introduced. (4-1)

Note: Credit will not be given for both Accounting 111 and 211, or Accounting 112 and 212.

Acctg 213 Accounting 3 Sem Hrs
 Prerequisite: Accounting 112 or Accounting 212. Relates principles and methods of handling materials, labor costs, and manufacturing expenses to the formulation of reports to management. Includes job order, process, standard direct costing procedures, and budgetary control. A job order practice set is completed. (3-0)

Acctg 214 Advanced Cost Accounting 3 Sem Hrs
 Prerequisite: Accounting 213. Emphasis on the role of cost and profit data as applied to the decisions of management. Subjects treated: Estimated cost, budgetary control and flexible budgets, analysis and control of distribution costs, cost-profit-volume analysis, differential cost analysis, return on capital employed, and pricing policies. (3-0)

Note: Senior colleges may prefer to have their accounting majors take this advanced course at their institutions.

Acctg 215 Federal Tax Accounting 3 Sem Hrs
 Prerequisite: Accounting 112 or Accounting 212. Surveys principles and procedures of auditing; attention is given to auditing concepts, professional ethics and responsibility, the audit program, auditing procedures, working papers, and simple audit reports. Completion of an integrated case study which involves the preparation of the working papers and the report for a complete audit is required. (3-0)

CO-OPERATIVE EDUCATION

Co-op Ed 121 Cooperative Office Education 3 Sem Hrs

Prerequisite: Employable skill and consent of coordinator. Places the student in a school or business office for supervised, on-the-job experience. Evaluations are made by the employer and the coordinator. Class meets with the coordinator one hour each week. Term paper and/or project reports required of each student. (1-15)

Co-op Ed 122 Cooperative Office Education 3 Sem Hrs

Prerequisite: Cooperative Education 121. A continuation of Cooperative Education 121, with additional responsibilities at the work station. Term paper or project reports required of each student. (1-15)

Co-op Ed 125 Cooperative Distributive Education 3 Sem Hrs.

Prerequisite: Employable skill and consent of coordinator. Places the student in a distributive occupation for supervised, on-the-job experience. Evaluations are made by the employer and the coordinator. Class meets with the coordinator one hour each week. Term paper and/or project reports required of each student. (1-15)

Co-op Ed 126 Cooperative Distributive Education 3 Sem Hrs

Prerequisite: Cooperative Education 125. A continuation of Cooperative Education 125, with additional responsibilities at the work station. Term paper or project reports required of each student. (1-15)

Co-op Ed 221 Cooperative Office Education 3 Sem Hrs

Prerequisite: Cooperative Education 122. A continuation of Cooperative Education 122, with the introduction of new duties or responsibilities; additional research is done. (1-15)

Co-op Ed 222 Cooperative Office Education 3 Sem Hrs

Prerequisite: Cooperative Education 221. A continuation of Cooperative Education 221, with added duties or responsibilities; further research. (1-15)

Co-op Ed 225 Cooperative Distributive Education 3 Sem Hrs

Prerequisite: Cooperative Education 126. A continuation of Cooperative Education 126, with the introducing of new duties or responsibilities; more research is done. (1-15)

Co-op Ed 226 Cooperative Distributive Education 3 Sem Hrs

Prerequisite: Cooperative Education 225. Continuation of Cooperative Education 225, with added duties or responsibilities; further research. (1-15)

DATA PROCESSING

Bus Mach 179 Key Punching and Verifying 2 Sem Hrs

(See Business Machines)

Data Proc 133 Introduction

Prerequisite: None. Provides a basic orientation to the field of computers and their usage. Scope of course includes the punch card, design and uses; tabulating equipment, functions and applications; computer, brief history, input and output devices, study of the 1620 computer, SPS, FORTRAN, and applications (3-1);

Data Proc 134 Data Processing Machine

Operations 3 Sem Hrs

Prerequisite: Data Processing 133. Includes a brief review of card design, key punching, verifying and sorting. The student will wire control panels and learn to operate the interpreter, reproducer, collator, and accounting machine. Upon completion of the course the student will be able to design cards, wire the panels, and operate the machines to provide the desired report. (3-1)

Data Proc 235 Data Processing Applications 3 Sem Hrs

Prerequisite: Data Processing 133. A study of data processing systems and procedures involving analysis of various existing data processing applications in business and industry. Includes a study of integrated or total management information and data processing' systems. Emphasis is given to developing detailed procedures in various areas of management. The course is designed to study the three phases necessary: Analysis of present information flow; System specification and equipment; implementation and documentation of the system. (3-0)

Data Proc 237 Computer Programming 3 Sem Hrs

Prerequisite: Data Processing 133. Data Processing 134 recommended. Designed for a person who wishes to understand the use and programming of the IBM 1620 computer in bus-

iness and data processing. The early part of the course will deal with magnetic core structure, binary representation, 1/0 devices and commands. The main body of the course will concern itself with programming, compiling and testing typical applications. (3-0)

Data Proc 238 Computer Programming 3 Sem Hrs

Prerequisite: Data Processing 133. Data Processing 134 recommended. Designed for a person who wishes to understand the use and programming of the IBM 1400 series equipment in business and data processing. The early part of the course will deal with magnetic core structure and binary representation while the main body of the course will concern itself with programming, compiling, and testing typical applications. Random access file storage will be emphasized. (3-0)

Data Proc 239 Computer Programming 3 Sem Hrs

Prerequisite: Data Processing 133. Data Processing 134 recommended. Designed for students who wish to understand, use and program the IBM System /360 in business and data processing. The course will include fundamental concepts of the System /360, commands and constants using Basic Assembler Language, and programming typical applications in BAL. (3-0)

**Data Proc 243 Report Program Generator
Programming 2 Sem Hrs**

Prerequisite: Data Processing 133. Input, data, calculation and output specifications statements for reporting and routine accounting applications will be covered. Programs will be written, compiled and tested. (2-0)

Data Proc 245 COBOL Programming 3 Sem Hrs

Prerequisite: Data Processing 133. The early part of the course will include the advantages of COBOL, its strength, potential applications and basic rules. The major portion of the course will concern itself with programming, compiling and testing typical applications. (3-0)

Data Proc 246 PL/I Programming 3 Sem Hrs

Prerequisite: Data Processing 133. The early part of the course will include the advantages of PL/I, potential applications and basic rules. The major portion of the course will concern it-

self with programming, compiling and testing typical applications. (3-0)

DISTRIBUTIVE EDUCATION

**Dist Ed 141 Transportation and Traffic
Management 3 Sem Hrs**

Prerequisite: None. Provides information, practice, and techniques necessary to qualify for position on the Traffic Management Divisions of larger industry and carrier companies. Covers history of American transportation systems, developments leading to Federal regulation of carriers other than railroad, classification of freight rates and tariffs, shipping documents and their application in freight claims. (3-0)

**Dist Ed 142 Transportation and Traffic
Management 3 Sem Hrs**

Prerequisite: Distributive Education 141. Deals with tariff circulars, construction and filing of tariffs, freight rates and tariffs, terminal facilities and switching, demurrage, transit privileges, warehousing and distribution, materials handling and packaging. (3-0)

Dist Ed 143 Advertising 3 Sem Hrs

Prerequisite: None. Stresses the manifold goals of advertising and its role in a marketing communications program as needed by tomorrow's professional managers. An appreciation of the rationale and strategies behind advertising campaigns is presented.

Dist Ed 145 Sales 3 Sem Hrs

Prerequisite: None. Brings the marketing concept into sales education. Information on psychology, sociology economics, and communications is employed in a contemporary concept of salesmanship. (3-0)

**Dist Ed 241 Transportation and Traffic
Management 3 Sem Hrs**

Prerequisite: One semester of Transportation and Traffic Management on consent of division chairman. Includes through routes and rates, milling in transit, technical tariff and rate interpretation, overcharges and undercharges, losses and damages, and a review of decisions of the Interstate Commerce Commission. (3-0)

Dist Ed 242 Transportation and Traffic Management 3 Sem Hrs

Prerequisite: Transportation and Traffic Management 241 or consent of division chairman. Includes evaluation of the Interstate Commerce Act, its interpretation and application, procedures and practice before the Interstate Commerce Commission, statutory authority for awarding damages, and a review of decisions of the Interstate Commerce Commission. (3-0)

Dist Ed 243 Marketing 3 Sem Hrs

Prerequisite: None. Provides an understanding and interpretation of the marketing system and its importance in the economy and the place of the marketing function in business management. The marketing framework is established and a basic understanding of the processes, functions, and channels is presented. Role of the government in marketing procedure is emphasized. (3-0)

Dist Ed 245 Principles of Management 3 Sem Hrs

Prerequisite: Accounting 112 or 212. Designed to train students in the analysis of management problems and the synthesis of solutions. Theories of management practices are discussed and fundamentals of administrative, executive, and staff management explained. Emphasis is placed on preparation of information required for decision making. (3-0)

Dist Ed 247 Problems of Retail Merchandising 3 Sem Hrs

Prerequisite: Distributive Education 145 and 243. Investigates methods used by retail businesses to plan the marketing of merchandise in relation to time, place, quantities, and price. The importance of advertising, sales promotion, layout and display, accounting procedures and controls, use of financial data and human resources is recognized. (3-0)

GENERAL BUSINESS

Gen Bus 151 Business Communications 3 Sem Hrs

Prerequisite: Typewriting 171 or its equivalent, or Typewriting 171 taken concurrently. Teaches principles of effective oral and written communications. Practice provided in letter writing, preparation of management message, compilation and completion of job applications, communications by telephone and wire, techniques of dictating, courteous interchange of thought.

Gen Bus 152 Business Communications 3 Sem Hrs

Prerequisite: Business Communications 151. Studies the influence of oral and written communication upon human relations in business, and applies effective methods that may be used. Emphasis placed on tone, form, accuracy, clarity, appeal and psychology in writing letters and reports. Designed also for increasing the business vocabulary, and understanding current business literature. (3-0)

Gen Bus 153 Business Organization 3 Sem Hrs

Prerequisite: None. Clarifies the role of business in modern society. The significant relationships which exist between business and the social, political and economic environment are stressed. The interconnection between business and other institutions in our environment is emphasized. (3-0)

Gen Bus 155 Filing 1 Sem Hr

Prerequisite: None. Presents basic filing rules and provides practical application with exercises involving the alphabetic and numeric systems of filing. One or more units (Filing 155, 156, 157) may be taken in one semester. (1-0)

Gen Bus 156 Filing and Records Management 1 Sem Hr

Prerequisite: Filing 155. A continuation of the study of filing systems to include geographic, subject and subject-decimal filing. Emphasis placed on the study of filing as a basic tool of management. Consideration given to equipment and supplies, use and control of records, transfer and disposal of records. One or more units (Filing 155, 156, 157) may be taken in one semester. (3-0)

Gen Bus 157 Advanced Filing and Records Management 1 Sem Hr

Prerequisite: Filing 156. A continuation of the study of records management and specific filing problems, with outside readings, field trips, oral and written reports. One or more units (Filing 155, 156, 157) may be taken in one semester. (3-0)

Gen Bus 251 Business Law 3 Sem Hrs

Prerequisite: None. Introduces the court system; a study of contracts, agency, employment, personal property, and bailments. (3-0)

Gen Bus 252 Business Law	3 Sem Hrs	transcription skills, includes English, grammar review, vocabulary study, and spelling. Laboratory assignments required. (4-0)
Prerequisite: Business Law 251 or consent of the chairman of the Business Division. A study of partnerships and corporations, real property, negotiable instruments, sales, insurance, trusts and estates, government and business. (3-0)		
Gen Bus 253 Credit and Collections	3 Sem Hrs	
Prerequisite: None. Presents a practical study of the meaning and importance of credit, with particular attention given to management's credit operations and problems. Some specific areas covered are: extent of retail credit, source of credit information; legal aspects, policies and procedures; collection methods. (3-0)		
Gen Bus 255 Office Management	3 Sem Hrs	
Prerequisites: Business Communications 151 and Typewriting 171, or consent of division chairman. Presents the principles of office organization, together with current concepts of planning, controlling, and managing. Emphasis given to personnel, equipment and supplies, simplification of work, reports for production and distributive services. Recognition given to the role of human relations in effecting efficient, harmonious activities. The case study method is employed. (3-0)		
Gen Bus 257 Corporation Finance	3 Sem Hrs	
Prerequisite: Econ 111 or 221 and Acctg 213. The policies and techniques of financing various types of business enterprises; stresses the sources of funds and the managerial use of funds, examining the conflict between liquidity and profitability that the finances must consider. (3-0)		
SECRETARIAL SCIENCE		
Sec Sc 161 Beginning Shorthand	4 Sem Hrs	
Prerequisite: None. Theory of Gregg Shorthand, Diamond Jubilee Method. Includes a development of skill in reading, intensive study of brief forms, writing of practiced and new materials, and pre-transcription training. Laboratory assignment required. (4-0)		
Sec Sc 162 Intermediate Shorthand	4 Sem Hrs	
Prerequisite: Shorthand 161 and Typewriting 171, or equivalents. Must be accompanied by Typewriting 172 or 173. Designed to increase speed in taking new-matter dictation. Builds		
Sec Sc 163 Dictation and Transcription	4 Sem Hrs	
Prerequisite: Shorthand 162. Emphasizes speed and accuracy in transcribing mailable letters. Extends the development of writing speeds on new-matter dictation. Introduces special techniques in handling office dictation. Laboratory assignment required. (4-0)		
Sec Sc 164 Speed Building and Specialized Shorthand	3 Sem Hrs	
Prerequisite: Dictation and Transcription 163 or consent of division chairman. Students are expected to attain high speed in taking and transcribing dictation. Offers specialized vocabularies and materials in the chemical, legal, medical, reporting, and technical fields, according to career interest of the student. Laboratory assignments required. (3-0)		
Sec Sc 165 Orientation to Medical Office Work	1 Sem Hr	
Prerequisite: None. Basic information about medical assistant opportunities and responsibilities. Medical terminology is introduced. (1-0)		
Sec Sc 166 Orientation to Community Health Services	1 Sem Hr	
Prerequisite: None. Introduction to the public and private agencies closely allied with work of the medical assistant. Study of medical terminology continued. (1-0)		
Sec Sc 261 Secretarial Practices	3 Sem Hrs	
Prerequisites: Business Communications 151 and Typewriting 172, or consent of division chairman. Broadens the secretary's concept of management in business. Attention given to developing an acceptable secretarial personality. Augments knowledge and skill in working with people, and in handling information in the areas of correspondence and reports, communications, calculating, mailing, filing. Related work assignments required. (3-0)		
Sec Sc 265 Nursing Arts	3 Sem Hrs	
Prerequisite: Orientation courses 165 and 166, and one course in Biology, or consent of chairman of the Business Division.		

Designed to provide knowledges and skills which will enable the medical assistant to work cooperatively and efficiently with doctor, members of staff, patients; to train the student in simpler techniques of nursing so that she may assist the doctor; to provide an appreciation of medical care so that she may interpret accurately to the public and health processes in her community. (2-2)

Sec Sc 266 Orientation to the Medical Laboratory 3 Sem Hrs

Prerequisite: Business 265, or consent of division chairman. Lectures, demonstrations, and laboratory experience to familiarize the student with laboratory procedures commonly used in the medical office. Emphasis on terminology used in reporting findings; mixing and standardizing common solutions and reagents. An acquaintanceship with microbiology and bacteriology; qualitative urinalysis, hematology, microscopical examination of smears and sediments, EMR and EKG determinants. (2-2)

Sec Sc 181 Beginning Stenographic Machine Shorthand 4 Sem Hrs

Prerequisite: Bus Mach 171 or its equivalent or consent of division chairman. Theory is presented through a system of phonetic writing employing the Stenograph machine, which imprints in English letters. Dictation given on practiced and new materials. The student should be able to take accurate notes at the rate of 60 to 80 words per minute. Transcription is introduced. (4-1)

Note: Additional stenographic machine shorthand courses will be added as needed.

Sec Sc 285 Review for CPS Examination 3 Sem Hrs

Prerequisite: None. Review of business law, accounting, economics, secretarial skills, secretarial procedures, and personal adjustment and human relations. Planning for taking the CPS examination is included. Offered only in Evening College. (3-0)

Sec Sc 286 Review for CPS Examination 3 Sem Hrs

Prerequisite: None. Continuation of Business 285. Emphasis will be placed on those parts of the examination for which individual students in the class have need. Offered only in Evening College. (3-0)

BUSINESS MACHINES

Bus Mach 171 Beginning Typewriting 2 Sem Hrs

Prerequisite: None. Mastery of the keyboard and practice in basic skills and machine techniques of the touch system of typewriting, simple centering, tabulations, placement, and common letter forms. May be taken for personal use. (2-2)

Bus Mach 172 Intermediate Typewriting 2 Sem Hrs

Prerequisite: Business Machines 171 or its equivalent. Vocational training for business. Development of accuracy and speed; business and personal letters, rough drafts, tabulations, reports and simple business forms. Exploratory experience in the use of transcribing machines and duplication processes is given. (2-2)

Bus Mach 173 Advanced Typewriting 2 Sem Hrs

Prerequisite: Business Machines 172 or its equivalent. Typing of typical business projects at a rate equivalent to that expected in an office. Advanced drill and copy work to develop speed and accuracy. Stress placed on statistical typewriting. (2-2)

Bus Mach 174 Voice Transcription and Copying Machine Procedures 2 Sem Hrs

Prerequisite: Business Machines 172 or its equivalent. Provides: (1) Training in the skillful operation of voice transcription machines such as Dictaphone, Edison Voice Writer, and IBM Executary; (2) Survey of copying machines, with practice in the preparation of materials, and operation of several commonly used machines. (2-2)

Bus Mach 175 Machine Calculation 2 Sem Hrs

Prerequisite: Proficiency in arithmetic. Deals with the basic operations of such calculating machines as Friden, Monroe, Marchant, Comptometer, Burroughs, and the full keyboard and ten-key adding machines. Four hours weekly. May be taken in the same semester with Business Machines 176. (2-1)

Bus Mach 176 Machine Calculation 2 Sem Hrs

Prerequisite: Business Machines 175. A continuation of Business Machines 175, with emphasis placed on vocational efficiency and speed of manipulation on the key-driven calcu-

lator. **Four** hours weekly. May be taken in the same semester with Business Machines 175 or 177. (2-2)

Bus Mach 177 Machine Calculation 2 Sem Hrs

Prerequisite: Business Machines 176. Advanced study in machine calculation. Designed particularly for specialization. **Four** hours weekly. May be taken in the same semester with Business Machines 176. (2-2)

Bus Mach 179 Key Punching and Verifying 2 Sem Hrs

Prerequisite: Business Machines 171, or equivalent. Builds skill in key punching and verifying the IBM card. Students who successfully complete the course will have sufficient knowledge to do productive work on the IBM card punch and verifier. A background in terminology and use of the punched card is provided. (2-2)

ENGLISH DIVISION

Division Chairman — Maurice S. Albedra, Assistant Professor

Associate Professor

Brendan R. Cahill
Leticia S. Molter

Assistant Professor

Guido O. Bocciardi
Pauline K. Drumm
Hulda M. Fritzemeier
Genevra H. Grossman
William C. Harman

Instructor

Geraldine R. Anderson
John F. Augustine
Dana E. Blackwell
Virginia J. Browsh
Gerald V. Ellison
Judith P. Fedorowicz
Florence H. Gase
Joan B. Gronewald
Gerald L. Hall
Martha J. Keil
Mary C. Lotridge
Sol S. Marcus

Suzanne K. McConnell

James M. McGinty

Fred W. Renker, Jr.

Charlotte W. Seiler

Alice B. Ziegler

ENGLISH DIVISION

English. Reading Development 3 Hrs Service Credit

Prerequisite: None. Development of general reading ability. Emphasis on flexibility of rate and comprehension of content materials. Each student will receive individual attention for specific reading or study difficulties. (2-1)

Eng 72 Improvement English 4 Hrs Service Credit

Fundamentals of written composition are practiced. Content and organization of themes vocabulary, spelling, sentence structure and paragraphing are included with orientation to the needs of the student.

Eng 73 Improvement English 3 Hrs Service Credit

Prerequisite: English 72 or adequate scores on placement tests. Review of grammar, vocabulary, and written expression in preparation for English 111. Achievement in composition is stressed.

Eng 111 Freshman Composition 3 Sem Hrs

Prerequisite: None. Development of competence in reading and writing with emphasis on various kinds of writing. (3-0)

Eng 112 Freshman Composition 3 Sem Hrs

Prerequisite: English 111. A continuation of English 111 with emphasis on reading literary selections as well as further practice in writing. (3-0)

Eng 113 Technical Writing 3 Sem Hrs

Prerequisite: English 111. Techniques for written presentation of technical material in formal and informal reports. The emphasis will be on general principles with specific applications in conjunction with technical courses or actual job experience. (3-0)

Eng 115—Basic Journalism Skills 2 Sem Hrs
Prerequisite: None. History and principles of journalism; introductory advertising, news gathering and reporting. Feature and editorial writing and the necessary skills needed in proof reading and editing are stressed. (2-0)

Eng 116 News Reporting 2 Sem Hrs
Prerequisite: None. Principles and practice of reporting for newspapers and other mass media. Study of history and ethics of journalism. (2-1)

Eng 121 Reading Techniques 2 Sem Hrs
To assist the average or better reader in developing reading skills, flexible reading rates, and increased comprehension while reading faster. Critical and analytical reading techniques, skimming, and scanning are developed. (2-0)

Eng 211 Advanced Composition 3 Sem Hrs
Prerequisite: English 112. Instruction and practice in expository and argumentative writings based on the reading of literary selections. (3-0)

Eng 221 Introduction to Literature 3 Sem Hrs
Prerequisite: English 112. Designed to increase the student's appreciation of literature. Emphasis will be placed on readings in the short story and poetry. (3-0)

Eng 241 Introduction to Mythology 3 Sem Hrs
Prerequisite: English 112. A study of the myths of Greece, Rome, and the Levant as they have appeared in **The Iliad**, **The Odyssey**, **The Metamorphoses**, **The Aeneid**, and **The Old Testament**, with emphasis on their relationship to modern literature. (3-0)

Eng 251 Children's Literature 3 Sem Hrs
Prerequisite: English 112 and speech course. A survey of literature for children in the elementary grades, aimed at developing techniques for using books with children, story telling, and the criteria for book selection. (3-0)

Eng 252 Creative Writing 3 Sem Hrs
Prerequisite: English 112 and permission of the instructor. Through analysis of various forms of writing and frequent

compositions, the student is encouraged to develop writing skills according to his own interests and abilities. (3-0)

Eng 261 Dramatic Literature 3 Sem Hrs
Prerequisite: English 112. Designed to develop appreciation of dramatic literature, this course is concerned with the nature, purpose, and methods of drama. Reading of representative plays from Shakespeare to the present. (3-0)

Eng 271 American Literature 3 Sem Hrs
Prerequisite: English 112. Major movements and themes in American literature as they appear in the works of important authors from the Puritan period to and including the Age of Romanticism are studied. (3-0)

Eng 272 American Literature 3 Sem Hrs
Prerequisite: English 271. A continuation of English 271. Study of major movements and themes in American literature from Walt Whitman through the Age of Realism and New Directions. (3-0)

Eng 275 The Negro in American Literature 3 Sem Hrs
Prerequisite: English 112. Designed to develop understanding of the way black people have been portrayed in American literature. Students will read, discuss and write about both black and white writers with emphasis on modern authors such as DuBois, Hughes, Ellison and Baldwin. (3-0)

Eng 281 British Literature 3 Sem Hrs
Prerequisite: English 112. A survey of the major British authors and writings from Beowulf to the Romantic Revolt. The student will critically study such literary figures as Chaucer, Shakespeare, Milton and their contemporaries. In addition, through several research papers, the student is expected to demonstrate a comprehension of the contemporaneous ideas expressed by these men and the literary forms evolved by them. (3-0)

Eng 282 British Literature 3 Sem Hrs
Prerequisite: English 281. This course continues the student's survey of major British authors from the Romantic Revolt to the present time. Included will be such literary figures as Wordsworth, Coleridge, Byron, Shelley, Keats, Browning, and

Eliot. Once again, through critical research papers, the student will be expected to relate these authors with their times and their literary forms. (3-0)

HEALTH, PHYSICAL EDUCATION AND RECREATION DIVISION

Division Chairman — Lynn V. Conway, Associate Professor

Assistant Professor

Barry D. Campbell
Charlotte A. Denman
Crawford E. Kennedy
Elanore M. Thompson

Instructor

Patricia A. O'Toole
Richard W. Prentice
Paul D. Radlinski
James M. Still

General Requirements in Physical Education Courses

1. The graduation requirement in physical education is two semester hours in activity courses.
2. Credit cannot be secured twice for the same numbered course.
3. All of the activity courses listed are introductory in nature and carry one semester hour of credit. The letter "A" after a course number will designate an advanced course.
4. A minimum of 30 participating hours are required for one semester hour of credit in activity courses.
5. Whenever a course covers several activities it shall be designated by the number of the first activity covered.
6. Course offerings, by semester, will be listed under (6) Readings, Men's courses, Women's courses, Co-ed courses, Theory courses, First and Second Block classes.
7. A third and fourth semester hour in physical education activities courses may be elected and will fulfill the four semester hour requirement at some transfer institutions.

ACTIVITY COURSES

PE 101 Physical Fitness 1 Sem Hr

Fitness through the use of calisthenics and self-testing exercises. Physical Fitness tests will be given and individual improvement records kept. (0-2)

PE 102 Physical Conditioning Through Sports 1 Sem Hr

Conditioning through the use of selected sport activities. (0-2)

PE 105 Special Skills 1 Sem Hr

Individual or small group assignments designed to meet the specific needs of students. Signature of the instructor is required. (0-2)

PE 111 Team Sports 1 Sem Hr

Coverage of two or more selected team sports in season selected from Physical Education 112 to Physical Education 118, inclusive. (0-2)

PE 112 Basketball 1 Sem Hr

Covers basic skills of passing, dribbling, shooting and team play. Rules and strategy also included. (0-2)

PE 113 Field Hockey 1 Sem Hr

Rules, fundamental skills and team play in field hockey. (0-2)

PE 114 Soccer 1 Sem Hr

Basic skills in kicking, dribbling, heading and positional play. Rules and strategy are included. (0-2)

PE 115 Softball 1 Sem Hr

Covers throwing, catching, batting and base running along with the rules of play. (0-2)

PE 118 Volleyball 1 Sem Hr

Basic skills of handling the ball, passing, setting, spiking, net-rebound play, and blocking. Rules and strategy are included. (0-2)

PE 122 Badminton 1 Sem Hr

Techniques and use of the various shots along with rules and strategy. (0-2)

PE 123 Fencing	1 Sem Hr	PE 138 Track and Field	1 Sem Hr
An introduction to foil fencing, its basic fundamentals, techniques, rules and safety measures. (0-2)			
PE 125 Sports Judo	1 Sem Hr	PE 139 Weight Training	1 Sem Hr
Introduction to the rules, skills, and courtesies in sports judo as well as the special conditioning required. (0-2)			
PE 127 Tennis	1 Sem Hr	PE 141 Folk and Square Dancing	1 Sem Hr
An introduction to the basic strokes in tennis along with rules, strategy, and courtesies of the game. (0-2)			
PE 128 Wrestling	1 Sem Hr	PE 142 Modern Dancing	1 Sem Hr
Covers special conditioning, take downs, elementary holds, breaks and plan as well as rules. (0-2)			
PE 132 Archery	1 Sem Hr	PE 143 Social Dancing	1 Sem Hr
Introduction to the basic skills in shooting, in target and field archery. (0-2)			
PE 133 Bowling	1 Sem Hr	This course involves basic dance steps of the Fox Trot, Waltz, Swing, Cha Cha, Rumba, Samba, Tango. (0-2)	
Fundamentals of starting stance, approach, and delivery. The use of both spot and pin bowling, courtesies, rules and method of scoring. Special student rates on alley fees. (0-2)			
PE 134 Cross Country	1 Sem Hr	PE 151 Beginning Swimming	1 Sem Hr
Techniques and conditioning for competitive distance running. Permission of instructor is required. (0-2)			
PE 135 Golf	1 Sem Hr	PE 152 Intermediate Swimming	1 Sem Hr
Fundamentals in the use of woods, irons, and putter along with the rules and courtesies of the game. (0-2)			
PE 136 Gymnastics	1 Sem Hr	Prerequisite: Physical Education 151 or consent of instructor. Skills in swimming the crawl, side stroke, elementary back and breast stroke. Safety measures and elementary forms of rescue. (0-2)	
Emphasis is placed on the fundamental skills of tumbling and apparatus work. (0-2)			
PE 137 Skiing	1 Sem Hr	PE 153 Advanced Swimming	1 Sem Hr
Emphasis placed on the fundamental skills. The student will be taught the snowplow, snowplow turn, traversing, stem turn, side slipping, and the stem Christie. (0-2)			
Prerequisite: Physical Education 152 or consent of instructor. Improvement of strokes learned in Physical Education 152 along with the back stroke and elementary diving. (0-2)			
PE 154 Senior Life Saving	1 Sem Hr	PE 155 Water Safety Instructor	1 Sem Hr
Prerequisite: Consent of instructor. Instruction in American Red Cross Senior Life Saving leading toward its certificate. (0-2)			
Prerequisite: A current Senior Life Saving Certificate and the consent of the instructor. Instructions in the American Red Cross Water Safety Instructor Course leading toward its certificate. (0-2)			

PE 156 Canoeing	1 Sem Hr	PE 180 Theory of Field Hockey and Basketball for Women	2 Sem Hrs
Prerequisite: Ability to swim. Instruction in basic American Red Cross Canoeing course. Involves one-day trips to nearby lakes and rivers. Usually six sessions of five hours each. Reduced student fees for canoe rentals. (0-2)			
THEORY COURSES		PE 181 Fundamental Teaching and Theory of Officiating Basketball and Softball	2 Sem Hrs
PE 161 Foundations of Physical Education	2 Sem Hrs	Prerequisite: PE 180. Orients students with problems of teaching these activities. Open to women students. Students learn officiating and obtain practical experience. (2-1)	
PE 162 Administration of Sports	2 Sem Hrs	HUMANITIES DIVISION	
A course designed to acquaint the student with officiating and give him basic knowledge of the rules and fundamentals of football and basketball. This course also covers intramural scheduling and tournament planning. (2-2)			
HE 165 First Aid and Safety	2 Sem Hrs	Division Chairman — Gene R. Duckworth, Assistant Professor	
Study and practice in first aid treatment. Stress laid on prevention and safety measures. Student will pursue the standard and advanced first aid courses of the American Red Cross and will receive certificates upon successful completion of the course. (2-3)			
PE 166 Physical Education in Elementary Schools	2 Sem Hrs	Associate Professor	
This course deals with the principles, methods and materials of teaching physical education in the elementary schools. (2-2)			
RE 167 Recreation Leadership	2 Sem Hrs	Assistant Professor	
A study of the underlying principles of leadership. Study and practice in the problems of presenting recreation programs in churches, schools, playgrounds, and camps. (2-2)			
HE 171 Personal Health	3 Sem Hrs	Instructor	
(Formerly Biology 113)			
Prerequisite: None. Intended to develop a better understanding of the normal functioning of the human body and to encourage more effective attitudes toward the physical and mental well-being of the individual and the community. (3-0)			
			Television Staff
			William Ballard, Director of Television and Station Manager
			Ronald A. Black, Program Director
			Thomas E. Haskell, Operation Manager
			James F. Heiss, Producer-Director
			Robert Bradsell, Producer-Director

BROADCASTING PROGRAM

The Delta College Broadcasting Curriculum combines special radio-television courses with general education classes. Students work with professional broadcasters who serve as teaching faculty. Experience in the College's Television Department may be coupled with on-the-job training at local commercial stations.

Upon successful completion of the four-semester Broadcasting Curriculum, students are eligible for an Associate Degree in Arts or an Associate Degree in Applied Science depending on selection of electives. In fundamentals of broadcasting, for example, freshmen composition, physical education and political science augment a block of radio-television classes including speaking and announcing, studio operations, broadcast news, oral interpretation, broadcast sales, and television production and direction.

		Credits	Clock Hours
First Semester			
English 111	Freshman Composition	3	3
RTV 113	Radio-Television Workshop	1	3
RTV 151	Fundamentals of Broadcasting ..	3	3
RTV 152	Radio-Television Speaking	3	3
Political Science 111	American Government & Politics	4	4
Physical Education	.....	1	2
		15	18
Second Semester			
English 112	Freshman Composition	3	3
RTV 114	Radio-Television Workshop	1	3
RTV 153	Radio-Television Announcing ..	3	3
RTV 154	Radio-Television Operations	3	4
Physical Education	.....	1	2
Elective	.....	4	4
		15	19
(FCC third class license examination completed)			
Third Semester			
General Business 153 (Or Econ 221)	Business Organization	3	3
RTV 115	Radio-Television Workshop	1	3
RTV 155	Television Studio Operations ..	3	4
RTV 222	Broadcast News	3	3
Speech 213	Oral Interpretation of Literature	3	3
Elective	.....	3	3
		16	19

Fourth Semester

RTV 116	Radio-Television Workshop	1	3
RTV 227	Broadcast Sales	3	3
RTV 251	Television Production	3	4
Electives	.....	10	10
		17	20

The Television Department will attempt to provide work-related experiences in broadcasting stations for students who are qualified and desire such experience.

Those students who intend to transfer and pursue a baccalaureate degree should consult with a counselor when choosing electives.

ART

Art 105 Introduction to Art

2 Sem Hrs

Prerequisite: None. (Not open to art majors). A studio and lecture course for the student desiring some practical experience with drawing, painting, and the basic procedures employed in artistic creation, as an aid to self-expression or for cultural reasons. (0-4)

Art 111 Basic Freehand Drawing

3 Sem Hrs

Prerequisite: None. A beginning course in drawing designed for all students interested in the fundamentals of visual form and analysis of structure. Representational treatment of simple objects, forms and volumes in line, value and texture with a variety of media. (0-6)

Art 112 Advanced Drawing

3 Sem Hrs

Prerequisite: Art 111. A continuation of Art 111 emphasizing composition and a further understanding of the elements of drawing in relation to individual expression. Problems involve a variety of media. (0-6)

Art 113 Art Education

3 Sem Hrs

Prerequisite: None. Introduction to art for prospective teachers. Develops the ability to stimulate the creative interests of children in art. Acquaints the student with a variety of methods and materials adjusted to various grade levels. (0-6)

Art 114 Art Education

3 Sem Hrs

Prerequisite: Art 113. A continuation of Art 113. Additional investigation of the theories of art education and creative growth of children. (0-6)

Art 115 Basic Design — Two Dimensional 3 Sem Hrs
Prerequisite: None. Experimentation with the basic elements of design: line, form, space, value, texture and color. A variety of media is used in developing a visual vocabulary and understanding of art elements and composition. (0-6)

Art 116 Basic Design — Three Dimensional 3 Sem Hrs
Prerequisite: Art 115. A continuation of Art 115 with a series of problems designed to explore the elements of design in spatial compositions using a variety of basic materials. (0-6)

Art 117 Painting 3 Sem Hrs
Prerequisite: Art 111. Experimentation in oil, and other media. Exploring techniques, composition, and color, based on studies in still life, landscape and the figure. Recommended for students interested in art as a hobby, as well as for art majors. (0-6)

Art 121 Basic Ceramics 3 Sem Hrs
Prerequisite: Art 115. Introductory study of clay, glazes and their application, and techniques of construction. (0-6)

Art 151 Art History and Appreciation 3 Sem Hrs
Prerequisite: None. A survey of Western Art from prehistoric times through the 16th century. Deals with outstanding masterpieces and representative artists of the Egyptian, Greek, Roman, Romanesque, Gothic, and Renaissance periods. The emphasis is on the architecture and sculpture of those periods. (3-0)

Art 152 Art History and Appreciation 3 Sem Hrs
Prerequisite: None. A continuation of Art 151. A survey of the History of Western Art from the Renaissance through Baroque, Neo-Classicism, Romanticism, Impressionism, Expressionism and the various modern schools. The emphasis is on the painting of those periods. (3-0)

Art 153 History of Architecture 2 Sem Hrs
Prerequisite: None. The historical development of architecture as a major art form. This development is viewed in relation to man's knowledge of building techniques and available materials as affected by geographic, economic, political and religious influences. (2-0)

Art 154 The Arts of Africa and the Negro 1 Sem Hrs
Prerequisites: None. A study of the visual arts of Africa and the Negro. Topics are: (1) the visual arts as they developed in Africa, (2) the influence of African art on the arts of Europe and America, (3) the Negro in the arts of contemporary America and contemporary Africa. (1-0)

Art 210 Figure Drawing 3 Sem Hrs
Prerequisite: Art 111. A study of the essential aspects of life drawing such as gesture, mass, proportions, anatomy and structure. Essentially for the art major. (0-6)

Art 218 Advanced Painting 3 Sem Hrs
Prerequisite: Art 117. Still life, landscape, and non-objective problems in the various techniques of water color, tempera, and oil. Recommended for students interested in art as a hobby, as well as for art majors. (0-6)

Art 221 Introduction to Commercial Art 3 Sem Hrs
Prerequisite: Art 115. Instruction in lettering and rough layouts; introduction to typography layouts. Problems encountered in newspaper, magazine, direct mail, and other advertising forms. Laboratory, lecture, and field trips. (0-6)

Art 222 Sculpture 3 Sem Hrs
Prerequisite: Art 115. Laboratory experiences in sculpture and sculptural forms with particular attention given to techniques of forming and building plus the experience of casting in such media as plaster and cement. (0-6)

Art 280 Printmaking 3 Sem Hrs
Prerequisite: Art 111 and Art 115. A study of the art of printmaking and its major techniques; with studio practice in a variety of printing methods. The techniques taught are basically commercial art techniques with commercial potential as well as being useful to major artists. (0-6)

Art 291-292-293-294 Special Projects 1-4 Sem Hrs
Prerequisite: Permission of Humanities Division. Independent study or research into selected studio problems.

LANGUAGES

FRENCH

FR 111 Elementary French 4 Sem Hrs

Prerequisite: None. A beginning course presenting the basic structure of the French language with oral-aural drills for correct pronunciation and for understanding and using spoken French, dictation, reading and writing simple French, acquisition of a basic vocabulary. All students are required to do supplemental work in the language laboratory. (4-0)

FR 112 Elementary French 4 Sem Hrs

Prerequisite: French 111 or one year of high school French. A continuation of French 111 with further development of oral-aural skills. Grammatical structure with practice in writing French, and reading of easy French for comprehension of the written language and increasing vocabulary required language laboratory assignments. (4-0)

FR 211 Intermediate French 4 Sem Hrs

Prerequisite: French 112 or two years of high school French. Review and application of principles of French grammar by means of oral and written exercises and composition, pronunciation through aural and oral exercises and conversation, reading of French prose and outside reading to develop rapid reading ability at sight are stressed. Classes conducted as far as possible in French. (4-0)

FR 212 Intermediate French 4 Sem Hrs

Prerequisite: French 211 or three years of high school French. A continuation of French 211, with somewhat more emphasis on oral skill and conversation. (4-0)

GERMAN

Ger 111 Elementary German 4 Sem Hrs

Prerequisite: None. Acquisition of proper pronunciation, basic grammatical structures and vocabulary of modern spoken and written German by means of aural-oral practice, reading of simple texts, and written exercises. Language laboratory assignments required. (4-0)

Ger 112 Elementary German 4 Sem Hrs

Prerequisite: German 111 or one year of high school German. A continuation of German 111. (4-0)

Ger 211—Intermediate German 4 Sem Hrs

Prerequisite: German 112 or two years of high school German. Continued emphasis is placed on proper pronunciation habits and on application of basic grammatical structures of modern spoken and written German by means of aural-oral exercises, conversations, reading of German prose, and written exercises. As far as possible, this class is conducted in German. Language laboratory assignments required. (4-0)

Ger 212 Intermediate German 4 Sem Hrs

Prerequisite: German 211 or equivalent. A continuation of German 211 with emphasis on conversation and composition. Special attention given to those interested in technical German. (4-0)

RUSSIAN

Russ 111 Elementary Russian 4 Sem Hrs

Prerequisite: None. Acquisition of proper pronunciation, basic grammatical structures and vocabulary of modern spoken and written Russian by means of aural-oral practice, reading of simple texts, and written exercises. Language laboratory assignments. (4-0)

Russ 112 Elementary Russian 4 Sem Hrs

Prerequisite: Russian 111 or one year of high school Russian. Continuation of Russian 111. (4-0)

Russ 211 Intermediate Russian 4 Sem Hrs

Prerequisite: Russian 112 or two years of high school Russian. Continued emphasis placed on proper pronunciation habits and on application of grammatical structures of modern spoken and written Russian by means of aural-oral exercises, conversations, reading of Russian prose, and written exercises. As far as possible this class is conducted in Russian. Language laboratory assignments. (4-0)

Russ 212 Intermediate Russian 4 Sem Hrs

Prerequisite: Russian 211 or its equivalent. Continuation of

Russian 211 with more emphasis on conversation and composition. (4-0)

SPANISH

Spa 111 Elementary Spanish 4 Sem Hrs

Prerequisite: None. Emphasis on conversational Spanish. Daily oral-aural practice with required language laboratory assignments. Grammatical constructions accompanied by drill exercises and easy composition. Simple readings concerning Latin American Countries. (4-0)

Spa 112 Elementary Spanish 4 Sem Hrs

Prerequisite: Spanish 111 or one year of high school Spanish. Continuation of Spanish 111. (4-0)

Spa 211 Intermediate Spanish 4 Sem Hrs

Prerequisite: Spanish 112 or two years of high school Spanish. Review and application of principles of grammar by means of oral and written reviews, practice in conversation, outside reading to develop ability to read rapidly at sight, and translation from English into Spanish. As far as possible this class is conducted in Spanish. (4-0)

Spa 212 Intermediate Spanish 4 Sem Hrs

Prerequisite: Spanish 211 or three years of high school Spanish. A continuation of Spanish 211 with further detailed review and application of the principles of grammar, reading of Spanish short stories, and practice in advanced conversation and composition. As far as possible this class is conducted in Spanish. (4-0)

LIBRARY SCIENCE

Lib Sci 291 Classification and Cataloging 3 Sem Hrs

Principles and practices of library classification and cataloging, with emphasis on Dewey Decimal Classification system. Lectures combined with laboratory practice. (3-0)

Lib Sci 292 Reference Books 3 Sem Hrs

Study of basic books most frequently used by reference librarians. Use of encyclopedias, dictionaries, atlases, and indexes is stressed. Lectures combined with laboratory practice. (3-0)

MUSIC

Mus 101 Theory-Basic Musicianship 5 Sem Hrs

Prerequisite: None. However, basic musical knowledge recommended, i.e., keys notation, rhythm, and clefs. Comprehensive course for potential music majors. Emphasis on aural theory, written theory, and keyboard harmony. (3-4)

Mus 102 Theory-Basic Musicianship 5 Sem Hrs

Prerequisite: Music 101. Continuation of written theory with drill in harmonic and melodic dictation. Sight-singing and keyboard harmony through harmonic dictation of four-part Bach Chorale and other appropriate styles. (3-4)

Mus 105 String Ensemble 1 Sem Hr

Prerequisite: Experience in high school orchestra or equivalent. May be elected for four semesters. (0-2)

Mus 111 Music Literature 3 Sem Hrs

Prerequisite: None. Acquaints the student with fundamentals of listening, Symphonic music is emphasized. (3-0)

Mus 112 Music Literature 3 Sem Hrs

Prerequisite: Music 111. Continued study of instrumental music (concerta small ensemble). Promotes an understanding of and appreciation for vocal forms (opera, art, song, large choral works, i.e., oratorios, masses). (3-0)

Mus 115 Wind Ensemble 1 Sem Hr

Prerequisite: Band experience in high school or the equivalent. May be elected for four semesters. (0-2)

Mus 121 Elements of Music 3 Sem Hrs

Prerequisite: None. Rudiments of music, including notation, clefs, keys, syllables, and rhythm. Teaching of songs. Elementary conducting technique. Planned to meet the basic musical needs of those who expect to teach in the elementary grades. (3-0)

Mus 141 Choir 1 Sem Hr

Prerequisite: None. However, high school and/or church choir experience is recommended. Directed toward the study of representative choral music and public performances in college

and community activities. May be elected for four semesters. (0-3)

Mus 291 Special Projects and Seminars I 1-4 Sem Hrs
Prerequisite: Permission of Humanities Division. Study of selected music subjects not normally offered in the Music Department.

Mus 292 Special Projects and Seminars II 1-4 Sem Hrs
Prerequisite: Permission of Humanities Division. Study of selected music subjects not normally offered in the Music Department.

Mus 293 Special Projects and Seminars III 1-4 Sem Hrs
Prerequisite: Permission of Humanities Division. Study of selected music subjects not normally offered in the Music Department.

Mus 294 Special Projects and Seminars IV 1-4 Sem Hrs
Prerequisite: Permission of Humanities Division. Study of selected music subjects not normally offered in the Music Department.

PHILOSOPHY

Phil 211 Introduction to Philosophy 3 Sem Hrs
Prerequisite: Sophomore standing. Designed to acquaint the student with some of the fundamental questions that have confronted mankind and the way in which these questions have been dealt with by the most profound thinkers of the past and present. (3-0)

Phil 212 Readings in Elementary Philosophy 3 Sem Hrs
Prerequisite: Sophomore standing. Aims at direct reading of the earlier philosophers, especially Plato, Aristotle, Descartes. The historical approach to supplement the other method of theories-approach in philosophy. (3-0)

Phil 213 Introduction to Ethics 3 Sem Hrs
Prerequisite: Sophomore standing. Designed to enquire into the principles of moral philosophy and to study the many different theories of ethics included in the writings of the leading moral philosophers. (3-0)

Phil 221 Logic 4 Sem Hrs

Prerequisite: Sophomore standing or second semester Freshman with minimum C+ average. Development of effective thinking through the study of classical logic. Methods of clear argumentation, definition, assessment of evidence, and a brief introduction to inductive logic and the scientific method. (4-0)

RADIO — TELEVISION

RTV 113 Radio and Television Workshop 1 Sem Hr
Prerequisite: None. Introduction to television and radio production equipment, and its operation. Students are given the opportunity to participate in actual studio production work. (0-3)

RTV 114 Radio and Television Workshop 1 Sem Hr
Prerequisite: RTV 113, or consent of instructor. Continuation of RTV 113, with increased emphasis on proficiency and understanding of studio camera operation, and audio control equipment. (0-3)

RTV 115 Radio and Television Workshop 1 Sem Hr
Prerequisite: RTV 114, or consent of instructor. Continuation of RTV 114, with increased emphasis on lighting and staging technique. (0-3)

RTV 116 Radio and Television Workshop 1 Sem Hr
Prerequisite: RTV 115, or consent of instructor. Continuation of RTV 115, with increased emphasis on coordination of the various elements of production, including audio control, writing, studio lighting and staging, visual control, selection and integration. (0-3)

RTV 151 Fundamentals of Broadcasting 3 Sem Hrs
Prerequisite: None. Study of the origin, development, nature and function of radio and television stations, and networks. The economy, laws and regulations of the broadcasting industry are discussed. The self regulation of the industry and the social controls on it in modern society are evaluated. (3-0)

RTV 152 Radio and Television Speaking 3 Sem Hrs
Prerequisite: None. Analysis and practice in applying the principles of radio and television speaking. Preparation and

presentation of narration, speeches, interviews, discussions, and continuity are emphasized. Elementary consideration is given to the uses of studio and control room equipment. (3-0)

RTV 153 Radio and Television Announcing 3 Sem Hrs

Prerequisite: None. Training in specialized fields of announcing, including the procuring, writing and rewriting of news, sportscasting, commercials, ad lib speaking, children's programs, and special events. More attention will be given to the use of studio and control room equipment. (3-0)

RTV 154 TV Studio Operations 3 Sem Hrs

Prerequisite: None. This course is divided into three basic study units, types of equipment, operation of equipment, and responsibilities of TV studio personnel. Theory and practice of closed-circuit systems and station operation is included. (2-2)

RTV 155 TV Studio Operations 3 Sem Hrs

Prerequisite: Radio Television 154, or consent of instructor. A continuation of Radio-Television 154, with emphasis on the proficiency of studio equipment operation. Control room operation and procedures are integrated with class production and station operation. (2-2)

RTV 251 TV Production and Direction 3 Sem Hrs

Prerequisite: Radio-Television 154 or Radio-Television 155, or consent of instructor. TV production and direction through demonstration, discussion, and assigned experiences. The problems of casting, rehearsing, pacing, and over-all program producing and directing are considered. (2-2)

RTV 291 Special Projects Seminar 1-4 Sem Hrs

Prerequisite: Permission of Humanities Division. Independent study and research on a topic or project which has the prior approval of the Humanities Division.

SPEECH

Sp 101 Fundamentals of Speech for Engineering Students 3 Sem Hrs

Prerequisite: None. For students in engineering and scientific fields. Practice in speaking and outlining is stressed. Methods of illustrating technical, expository speeches, with blueprints,

charts, graphs, and demonstrations of scientific apparatus. Extemporaneous, manuscript, and report speech are required. (3-0)

Sp 102 Business and Professional Speech 2 Sem Hrs

Prerequisite: None. Speech techniques which an individual may apply in daily situations are stressed. Emphasis on speaking situations most frequently met by business and professional people, including business interviews, conferences, discussions, and the planning and conducting of meetings. (2-0)

Sp 111 Speech and Voice Improvement 3 Sem Hrs

Prerequisite: None. Designed to create awareness of what constitutes an effective voice, one which shows how voice is produced and controlled in order that common faults are overcome or avoided, and one which suggests how voice can be improved as an instrument of communication. (3-0)

Sp 112 Principles of Public Speaking 3 Sem Hrs

Prerequisite: None. Practical problems of public address for the beginning student. Speaking assignments include impromptu, extemporaneous, manuscript, and memorized methods of delivery. Outlining and organization of content stressed. (3-0)

Sp 201 Speech for the Classroom Teacher 3 Sem Hrs

Prerequisite: None. For education majors, it aims for an understanding of speech in the educational process, self-improvement of the teacher through classroom speech activities, and application of these principles to teacher-pupil relationships. Its comprehensive goal is to aid the teacher in his professional and personal relationships with his students, his colleagues, and his community. (3-0)

Sp 211 Advanced Public Speaking 3 Sem Hrs

Prerequisite: Speech 111 or 112. A survey of several forms of public address. Includes the theory of speech; frequent platform experiences. Attention given to radio and television speaking procedure. All speaking assignments outlined and personal and social communication stressed. (3-0)

Sp 213 The Oral Interpretation of Literature 3 Sem Hrs

Prerequisite: Speech 112 or permission of instructor. Understanding and appreciation of literature through awareness of

the oral basis of language. Analysis and communication of written text as thought, feeling, sound, and action. (3-0)

Sp 214 Discussion Techniques 3 Sem Hrs

Prerequisite: A previous speech course or permission of the instructor. Designed to explain discussion as a means to better understanding and action in human affairs and to develop attitudes and skills which enable people to participate in discussion competently. A study of group leadership. (3-0)

Sp 215 Introduction to the Theatre 3 Sem Hrs

Prerequisite: None. Designed to give the student some insight into the various aspects of theatrical production. The purpose is to make the student a discriminating observer of dramatic production whether on stage, film, or the TV screen. Included in this study are play analysis, acting, directing, scenery, lighting, and the different architectural periods of the theatre. (3-0)

SP 221 Argumentation and Debate 3 Sem Hrs

Prerequisite: Speech 112. Includes techniques of analysis, reasoning, briefing, and refutation. Each student will receive practice in platform debate of the current intercollegiate debate proposition. (3-0)

MATHEMATICS DIVISION

Division Chairman — Robert H. DeVinney, Associate Professor

Associate Professor

Joseph L. Mazanec
John H. Brinn

Assistant Professor

John S. Kostoff
Donald A. McPhee
Joanne V. Mosca
Newell H. Remington
Oskars K. Vilsons
Donna J. Weyer

Instructor

Jack L. Crowell
Robert F. Keicher
Anne E. Martin
William H. Redmond
Howard E. Seeburger
James S. Soddy

A student who receives a grade lower than C in a mathematics course may not use this course as a prerequisite for another mathematics course.

Math 91 Arithmetic 2 Hrs Service Credit

Prerequisite: None. Provides a foundation in arithmetic. Four fundamental operations on whole numbers, common and decimal fractions and percentages are taught by the use of the equation. Application to formulas and ratio and proportion are stressed. (2-0)

Math 92 Algebra I 3 Hrs Service Credit

Prerequisite: Mathematics 91 or equivalent and adequate test scores. Natural numbers, integers, first degree equations and inequalities, products and fractions and fractional equations, graphs and linear systems, radicals and quadratic equations. (3-0)

Math 93 Plane Geometry 3 Hrs Service Credit

Prerequisite: Mathematics 92 or equivalent. Calculations with approximate data, metric system, angles, parallel lines, congruency of figures, circle, ratio, proportion and similar polygons formulas applying to plane and solid figures, locus and construction. (3-0)

Math 101 Technical Mathematics I 5 Sem Hrs

Prerequisite: Knowledge of elementary algebra; Mathematics 93 advisable. Review of elementary algebra, slide rule, calculations with approximate data, linear and quadratic equations, graphical representation, exponents and radicals, variation and elementary topics in trigonometry. (5-0)

Math 102 Technical Mathematics II 5 Sem Hrs

Prerequisite: Technical Mathematics 101. Definitions and properties of trigonometric functions, solutions of triangles, vec-

tors, logarithms, slide rule, identities, equations, complex numbers, binomial theorem, progressions, and exponential functions. (5-0)

Math 103 Technical Mathematics III 5 Sem Hrs

Prerequisite: Technical Mathematics 102. Analytic geometry, differential calculus, and integral calculus. (5-0)

Math 105 Business Computation 3 Sem Hrs

Prerequisite: Mathematics 91 if mathematics placement test score is unsatisfactory. Rapid calculations with whole numbers, fractions and percents, various methods of checking results, interest, discount, depreciation, installment purchases, payrolls, insurance, and graphs. (3-0)

Math 108 Elementary Statistics 3 Sem Hrs

Prerequisite: Mathematics 119 or its equivalent. Elementary statistical concepts studied include frequency distributions, measures of central tendency and dispersion, sampling, estimation, testing hypothesis, linear correlation, and regression. (3-0)

Math 110 Mathematics for Elementary Teachers 3 Sem Hrs

Prerequisite: Mathematics 92 if mathematics placement test score is unsatisfactory. Numeration systems, sets and numbers, basic concepts and structure of arithmetic. (3-1)

Math 116 Slide Rule 1 Sem Hr

Prerequisite: Mathematics 121 or its equivalent. (May be taken concurrently.) For engineering students or those majoring in science or mathematics. Consult instructor before purchasing slide rule. (1-0)

Math 119 Intermediate Algebra 3 Sem Hrs

Prerequisite: Mathematics 92 or equivalent; mathematics 93 advisable. Fundamental concepts of algebra, graphs, exponents, radicals, variation, proportion, and logarithms. (3-0)

Math 121 Plane Trigonometry 3 Sem Hrs

Prerequisite: Mathematics 93 and Mathematics 119, or equivalents. (Mathematics 119 may be taken concurrently.) Definitions and properties of trigonometric functions, solution of tri-

angles, logarithms, identities, equations, inverse functions, complex numbers and applications. (3-0)

Math 122 College Algebra 3 Sem Hrs

Prerequisite: Mathematics 93 and Mathematics 119 or equivalents. Study of exponents, radicals, quadratic equations, variation, proportion, system of equations, determinants, theory of equations, inequalities, progressions, binomial theorem and probability. (3-0)

Math 131 Introductory College Mathematics 5 Sem Hrs

Prerequisite: Three and one half years of college preparatory mathematics. Study of exponents and radicals, functions and graphs, trigonometric functions, fundamental identities, reductions, angular measure, simultaneous linear and quadratic equations, functions of a composite angle, complex numbers, inequalities, logarithms, mathematical induction, binomial theorem, inverse functions, and determinants. (5-0)

Math 147 Introduction to Digital Computing 2 Sem Hrs

Prerequisite: Mathematics 122 or equivalent. Programming digital computers, fundamental concepts and techniques of computation with a computer, the FORTRAN language. Students will have opportunity to run problems on the IBM 1620. (2-0)

Math 161 Analytic Geometry and Calculus I 4 Sem Hrs

Prerequisite: Four years of college preparatory mathematics and a high score on the mathematics placement test, or Mathematics 131, or both Mathematics 121 and 122. Inequalities, relations, function, graphs, the line, limits, continuity, differentiation of algebraic functions, applications of differentiation, the definite integral, and circles. (4-0)

Math 162 Analytic Geometry and Calculus II 4 Sem Hrs

Prerequisite: Mathematics 161. The conics, differentiation of trigonometric and exponential functions, parametric equations, polar coordinates, vectors in a plane, methods of integration, and applications of integration. (4-0)

Math 261 Analytic Geometry and Calculus III 4 Sem Hrs

Prerequisite: Mathematics 162. Solid analytic geometry, vectors in three dimensions, elements of infinite series, partial differentiation, and multiple integration. (4-0)

Math 262 Analytic Geometry and Calculus IV 4 Sem Hrs

Prerequisite: Mathematics 261. Linear algebra, matrices, vector spaces, some special types of differential equations, linear differential equations, and series solutions of differential equations. (4-0)

Math 291 Special Projects and Seminars I 1-4 Sem Hrs

Prerequisite: Permission of Mathematics Division. Independent study and research on selected mathematical topics.

Math 292 Special Projects and Seminars II 1-4 Sem Hrs

Prerequisite: Continuation of Mathematics 291.

NURSING DIVISION

Luis E. Folgueras, Director of Nursing

Associate Professor

Crystal M. Lange

Assistant Professor

Phyllis A. Jernstadt

Caroline M. Mertz

Velma J. Phillips

Marjorie A. Tait

Instructor

Roma B. Blackman

Jessie R. Dolson

Joan E. Leach

Therese A. Seaman

Janice J. Twiss

Joyce E. Whittaker

Bonifacia M. Wojcik

Chal S. Bauer, Coordinator of Radiologic Technology

HEALTH CAREER PROGRAMS

Nursing. The nursing program prepares selected young men and women to function effectively as members of the health

team. The student will develop the ability to be self-directing, to identify problems, and to work toward achieving satisfactory solutions. He will develop the basic knowledge and skills necessary for the nurse's role in the care of the patient.

The nursing program is five semesters in length. It includes 34 semester hours in general education and 32 semester hours in nursing education. Clinical laboratory experiences are offered the student under the supervision of the college nursing faculty. Various health agencies of the Saginaw Valley are utilized in offering these experiences to the student.

Upon successful completion of the program of study the student will be awarded the Associate in Applied Science Degree by Delta College.

The nursing program is approved by the Michigan Board of Nursing. The student, after graduation, is eligible to sit for the State Board Examinations, leading to Michigan Licensure and the privilege of using the title of Registered Nurse (RN). The student will follow the curriculum outlined below:

DENTAL ASSISTING CURRICULUM

Course Number	Course Title	Lecture Hrs	Lab Hrs	Clock Hrs	Credit Hrs
First Semester					
DA 101	Introduction to Dental Assisting	4	0	4	4
DA 102	Dental Anatomy & Physiology	1	3	4	2
BS 101	Integrated Basic Science	4	3	7	5
GB 155	Filing	1	0	1	1
GB 156	Filing & Record Management	1	0	1	1
BM 171	Beg Typewriting	2	2	4	2
Phy Ed	Elective	0	2	2	1
		13	10	23	16
Second Semester					
DA 103	Dental Materials & Lab Procedures	3	3	6	4
DA 104	Dental Instruments & Equipment	2	0	2	2
GB 151	Business Communications	3	0	3	3
DA 105	Pathology & Pharmacology	3	0	3	3
Psy 101	Applied Psychology	3	0	3	3
Phy Ed	Elective	0	2	2	1
		14	5	19	16
Third Semester					
Soc 121	Prep for Marriage & Family Living	3	0	3	3
DA 201	Dental Roentgenology	2	3	5	3
DA 202	Operative Procedures	3	3	6	4
DA 203	Dental Records & Practice Administration	2	0	2	2
GB 152	Business Communications	3	0	3	3
		13	6	19	15

Fourth Semester

Sp 112	Principles of Public Speaking	3	0	3	3
DA 210	Internship	0	21	21	7
PS 103	Intro to American Government	3	0	3	3
	Elective	3	0	3	3
		9	21	30	16

NURSING CURRICULUM**First Semester**

		Credit Hrs	Lec	Lab	
Eng 111	— Freshman Composition	3	3	0	
Basic Science 101	— Integrated Basic Science	5	4	3	
	Basic Science				
Nurs 111	— Fundamentals of Nursing	6	3	8	
PE	— Physical Education	1	0	2	
		15			

Second Semester

Eng 112	— Freshman Composition	3	3	0	
Basic Science 102	— Integrated Basic Science	5	4	3	
	Basic Science				
Nurs 211	— Nursing in Physical and Mental Illness	8	5	12	
		16			

Third Semester

Gen Soc 211	— Principles of Sociology	3	3	0	
PE	— Physical Education	1	0	2	
		4			

Fourth Semester

Pol Sc 103	— Introduction to American Government ..	3	3	0	
Nurs 212	— Nursing in Physical and Mental Illness ..	8	5	12	
		11			

Fifth Semester

Sp or Lit	.....	3	3	0	
Nurs 112	— Nursing of Mothers, Infants and Children	8	5	12	
Nurs 213	— Trends in Nursing	2	2	0	
		13			

Legend:

Gen Ed — 32 hours credit

Nurs Ed — 32 hours credit

PE — Physical Education — 2 hours credit

Nursing Credit Ratio — 1 hour credit per 1 hour lecture

1 hour credit per 4 hours laboratory practice

RADIOLOGIC TECHNOLOGY CURRICULUM**First 15-week Semester**

		Sem Hrs
Basic Science 101	— Integrated Basic Science	5
Radiologic Technology 111	— Introduction to Radiologic Technology	
	Radiologic Technology	3
Physical Education 101	— Physical Fitness	1
Elective	— Elective	4-6
		13-15 Hrs

Second 15-week Semester

		Sem Hrs
English 111	— Freshman Composition	3
Radiologic Tech 101	— Radiographic Anatomy	3
Radiologic Technology 112	— Radiologic Technology I	5
Elective	— Elective	1
		12 Hrs

Third 15-week Semester

		Sem Hrs
English 112	— Freshman Composition	3
Radiologic Tech 102	— Radiographic Physics	3
Radiologic Technology 113	— Radiologic Techology II	8
		14 Hrs

Fourth 15-week Semester

		Sem Hrs
Psychology 101	— Applied Psychology	3
Business Machines 171	— Beginning Typewriting	2
Radiologic Technology 211	— Advanced Radiologic Technology I	11
		16 Hrs

Fifth 15-week Semester

		Sem Hrs
Sociology 211	— Principles of Sociology	3
Political Science 103	— Introduction to American Government	3
Radiologic Technology 212	— Advanced Radiologic Technology II	11
		17 Hrs

Sixth 15-week Semester

		Sem Hrs
Radiologic Technology 213	— Advanced Radiologic Technology III	15

Seventh and Eighth 15-week Semesters

		Sem Hrs
Radiologic Technology 311	— Radiologic Internship	12
Radiologic Technology 312	— Radiologic Internship	12

DENTAL ASSISTING

DA 101	Introduction to Dental Assisting	4 Sem Hrs
An introduction to the dental profession and the dental assistant's role as a member of the dental health team. Beginning		

study of dental nomenclature and office procedures. Nutrition as applied to dental health and oral hygiene. (4-0)

DA 102 Dental Anatomy and Physiology 2 Sem Hrs

The study of head and oral anatomy: the physiology and occlusion of the dentition. In the laboratory students will use dentoforms, models, casts and carvings. (1-3)

DA 103 Dental Materials and Laboratory Procedures 4 Sem Hrs

The study of gypsum products, impression materials, and restorative materials; their physical properties, preparation and manipulation. The construction of base plates, bite rims, custom impression trays and cast metal restorations. (3-3)

DA 104 Dental Instruments and Equipment 2 Sem Hrs

Introduction to dental instruments, equipment: identification, care, use and maintenance. (2-0)

DA 105 Pathology and Pharmacology (Including Anesthesia) 3 Sem Hrs

The pathology of soft and hard tissues of the oral cavity will be examined. Special emphasis on periodontal disease and dental caries. A study of drugs, their sources, methods of administration and precaution in administration. (3-0)

DA 201 Dental Roentgenology 3 Sem Hrs

The study of the principles and properties of x-rays, equipment and materials used in dental roentgenology. (2-3)

DA 202 Operative Procedures 4 Sem Hrs

Chairside assisting in the general and speciality practices. Pre-operative procedures, care of patient, operative procedures, and post-operative care. (3-3)

DA 203 Dental Records and Practice Administration 2 Sem Hrs

A course in office management with emphasis on patient and office records, communications, supplies and appointment control. (2-0)

DA 210 Internship 7 Sem Hrs

Students will be assigned to work in a dental office, making practical application of all previous course work. (0-21)

NURSING

Nurs 111 Fundamentals of Nursing 6 Sem Hrs

Prerequisite: Basic Science 101 or 102 shall be taken prior to or concurrently. Designed to develop the mechanical, observational, and communicative skills necessary to fulfill the physical needs of each individual. Emotional and spiritual needs are considered. The significance of becoming a self-directed and professional person is accentuated. Autotutorial laboratory and selected clinical experiences offer opportunities for the student to identify and gain skill in understanding and in meeting the patients' nursing care needs. (3-8)

Nurs 112 Nursing of Mothers, Infants, and Children 8 Sem Hrs

Prerequisite: Nursing 111, 211 and 212. Emphasizes normal conditions relating to the maternity cycle, including mother and newborn, as well as the care of children. Family centered care and mental health principles are emphasized throughout the course. An introduction to the more common variations in health as applied to this group is made. An opportunity for observation and practice in various community sources, including the hospital area is provided for the student to apply and strengthen the classroom teaching. Observations include emphasis on reactions and activities of normal, healthy children in non-hospital surroundings. Skill in caring for mother, infants, children and adolescents, both normal and abnormal, is developed through clinical practice. (5-12)

Nurs 211 Nursing in Physical and Mental Illness 8 Sem Hrs

Prerequisite: Nursing 111. The learning experiences in the previous courses provide the foundation to build the advanced concepts and skills of patient care. Deviations from health, physical and mental, are studied as they relate to all age groups. Psychological, psychosomatic, cultural, and socio-economic factors which may cause, complicate or affect nursing care are presented. Principles of rehabilitation, nutrition, and pharmacology are continued. Classroom and selected laboratory experiences enable the student to develop skills in providing nursing care to meet patient's needs. (5-12)

Nurs 212 Nursing in Physical and Mental Illness 8 Sem Hrs
Prerequisite: Nursing 111 and 211. Continuation of Nursing 211. Must be taken in sequence. (5-12)

Nurs 213 Trends in Nursing 2 Sem Hrs
Prerequisite: Nursing 111 and 211. Emphasis placed on nursing problems from the perspective of historical and philosophical development, and the evolving professional demands. Career selection and professional opportunities and preparation are discussed. (2-0)

RADIOLOGIC TECHNOLOGY

Radiologic Tech 101 Radiographic Anatomy 3 Sem Hrs
Prerequisite: Basic Science 101 or permission of the instructor. The study of structure and function of bones; bony prominences and depressions; classification and development of bones and application to radiography. (3-0)

Radiologic Tech 102 Radiographic Physics 3 Sem Hrs
Prerequisite: Basic Science 101 or permission of the instructor. Designed to familiarize the student with basic physical principles. Deals with mechanics, heat, sound, magnetism, electricity, and light. Emphasis placed on applicability to radiology. (3-0)

Radiologic Tech 111 Introduction to Radiologic Technology 3 Sem Hrs
Prerequisite: None. Two hours of lecture per week on campus. The theory, history, properties of x-ray, radiographic procedures and positioning as background for further training in radiologic technology. (2-3) *3 Hours per week devoted to the practice of the theory on campus.

Radiologic Tech 112 Radiologic Tech I 5 Sem Hrs
Prerequisite: Radiologic Tech 111. Three hours of lecture per week on campus. Nomenclature of positioning, medical terminology, techniques for special views, articulations, fractures of various bones, radiography of vertebral areas, bones of the thorax, skull and facial bones. Techniques for thoracic and abdominal viscera and glands, foreign bodies and soft tissue

calcification examination. Fifteen hours per week devoted to practice of the theory. This practice will be in the hospital x-ray department. (3-15)

Radiologic Tech 113 Radiologic Tech II 8 Sem Hrs
Prerequisite: Radiologic Tech 112. Three hours of lecture per week on campus. Nomenclature of positioning, medical terminology, techniques for special views, articulations, fractures of various bones, radiography of vertebral areas, bones of the thorax, skull and facial bones. Techniques for thoracic and abdominal viscera and glands, foreign bodies and soft tissue calcification examination. Fifteen hours per week devoted to practice of the theory. This practice will be in the hospital x-ray department. (3-15)

Radiologic Tech 211 Advanced Radiologic Tech I 11 Sem Hrs
Prerequisite: Radiologic Tech 112. Five hours of lecture per week, 3 on campus, and 2 hospital. The x-ray table, x-ray circuits, radiographic nature and properties, prime factors of radiography, exposure factors, filter, grids and field coverage. Special radiographic equipment, pneumoencephalography, angiography, photofluorography, cardioangiography; radiation therapy, and radioactive isotope procedures are explored and studied. Eighteen hours per week devoted to practice of the theory. This practice will be in the hospital x-ray department. (5-18)

Radiologic Tech 212 Advanced Radiologic Tech II 11 Sem Hrs
Prerequisite: Radiologic Tech 211. Five hours of lecture per week, 3 on campus, and 2 hospital. Lectures will include a general overview of previous radiologic technology courses, introduction to departmental administration, formulation of x-ray technique, and special and emergency procedures. Eighteen hours per week devoted to practice of the theory. This practice will be in the hospital x-ray department. (5-18)

Radiologic Tech 213 Advanced Radiologic Technology III 15 Sem Hrs
Prerequisite: Radiologic Tech 212. A continuation of Radiologic Tech 212; five hours of lecture per week at hospital, including overview of previous courses, departmental administration, x-

ray techniques, and special and emergency procedures. Eighteen hours per week devoted to practice of the theory. This practice will be in the hospital x-ray department. (5-30)

Radiologic Tech 311 Radiologic Technology

Internship 12 Sem Hrs

Prerequisite: Radiologic Tech 213. This is a graduation requirement; thirty-six hours per week of practical application of radiologic technology. This experience will be under the supervision of the radiologist and the chief radiologic technologist, and will be gained in the affiliating hospital departments of radiology. (0-36)

Radiologic Tech 312 Radiologic Technology

Internship 12 Sem Hrs

Prerequisite: Radiologic Tech 311. A continuation of the graduation requirement; 36 hours per week of practical application of radiologic technology. This experience will be under the supervision of the radiologist and the chief radiologic technologist, and will be gained in the affiliating hospital departments of radiology. (0-36)

SCIENCE DIVISION

Division Chairman — Samuel J. Freed, Professor

Associate Professor

Lorne P. Adams
Bruce C. Corliss
Dr. Richard H. Northrup
Dr. Edward J. Stry

Marion L. Woodford

Assistant Professor

Carl L. Altenhof
Clayton H. Borgman
Carl F. Cisky
Lois A. Downer
Eldon D. Enger
Andrew H. Gibson
Marion H. Whittaker
Westbrook A. Walker
Owen E. Homeister
Rodney J. Smith

Instructor

Nelson G. Greene
Jeanne S. Heinert
J. Richard Kormelink
William W. Redmond
Frederick C. Ross
David R. Williams
Ronald L. Wilson

AGRICULTURAL CURRICULUM

Associate Degree Program. Suggested curriculum for Students transferring to Michigan State University and other institutions:

First Semester	Sem Hrs
English 111 — Freshman Composition	3
Biology 111 — Principles of Biology	4
Chemistry 101 or Chemistry 111 — General Chemistry or General and Inorganic Chemistry	5, 4
Mathematics 131 — Introductory to College Mathematics	5
Physical Education — Physical Education	1
	18, 17 Hrs

Second Semester	Sem Hrs
English 112 — Freshman Composition	3
Soil Science (MSU 210) — Fundamentals of Soil Science	4
Chemistry 102 or Chemistry 112 — General Chemistry or General and Inorganic Chemistry	3, 4
Political Science 111 — American Government and Politics	4
Physical Education — Physical Education	1
	15, 16 Hrs

Third Semester	Sem Hrs
Speech 112 — Principles of Public Speaking	3
Economics 221 — Principles of Economics	4
Science Elective (3) —	4
Crop Science (MSU 251) — Plant and Animal Genetics	4
	15 Hrs

Fourth Semester	Sem Hrs
Agricultural Economics (MSU 240)	4
Psychology 211 — General Psychology	4
Science Elective (3)	4
General Business 151 (4) — Business Communications	3
	15 Hrs

(1) Choice depends on the agricultural major selected.

(2) Mathematics requirements depend on the agricultural major selected: generally, College Algebra or its equivalent is sufficient; Agricultural Engineering requires Mathematics 161, etc. Students may have to complete mathematics requirements after transferring.

(3) Supporting science depends on the agricultural major. Some choices are physics 111, 112, Mathematics 161, 162, Biology 111, 112.

(4) General Business 151 recommended; English 113 may replace General Business 151. One of the following may replace General Business 151:

Animal Science (MSU 325) — Applied Animal Nutrition	4
Biology 151 — Botany	4
Chemistry 211 — Organic Chemistry	5
Mathematics 161 — Analytic Geometry and Calculus I	4

If a student elects one of the four courses above instead of General Business 151 or English 113, he must then complete 3 additional hours of communications at Michigan State University.

Students must complete all of the humanities basic at Michigan State University.

CHEMICAL TECHNOLOGY CURRICULUM

Associate Degree Program

Some employment opportunities for technicians in Chemical technology are:

- Analyst
- Assistant Chemist
- Development Technician
- Sales Service Technician
- Research Technician

First Semester	Sem Hrs
Chemistry 111 — General and Inorganic Chemistry	4
English 111 — Freshman Composition	3
Mathematics 101 — Technical Mathematics I	5
Political Science 103 — Introduction to American Government	3
Physical Education — Physical Education	1
	16 Hrs

Second Semester	Sem Hrs
Chemistry 122 — General and Inorganic with Analytical Chemistry	5
English 113 — Technical Writing	3
Mathematics 102 — Technical Mathematics II	5
Economics 111 — Essentials of Economics	3
Physical Education — Physical Education	1
	17 Hrs

Third Semester	Sem Hrs
Chemistry 211 — Organic Chemistry (Lecture only)	4
Chemistry 223 — Quantitative Analysis	4
Physics 111 — General Physics	4
Elective	3
	15 Hrs

Fourth Semester	Sem Hrs
Chemistry 212 — Organic Chemistry	5
Chemistry 211 and 212 — Organic Chemistry Lab	0
Physics 112 — General Physics	4
Electives — See List Below	6 or 7
	15 or 16 Hrs

Suggested Electives

- Economics 112 — Essentials of Economics
- Mech Tech 291 — Quality Control
- Psychology 152 — Industrial Psychology
- Speech 101 — Fundamentals of Speech for Engineering Students
- Biology 111 — Principles of Biology
- Business Machines 171 — Beginning Typewriting
- Or other electives related to industries

SCIENCE DIVISION

AGRICULTURE

Soil Sc 210 Fundamentals of Soil Science 4 Sem Hrs

Prerequisite: Chemistry 102, 122 or 112. Principles of the origin and development of soils. Relationship of properties to utilization and soil fertility to plant composition and animal health. Emphasis is placed on changing soils to serve man. When offered in the fall, the orientation is toward earth and animal sciences; in the spring, the orientation is toward soil and plant sciences. (4-0)

Crop Sc 250 Plant and Animal Genetics 4 Sem Hrs

Prerequisites: Biology 151 or Biology 161. Fundamental genetic principles with particular reference to problems in plant and animal biology. (3-2)

Animal Sc 325 Applied Animal Nutrition 4 Sem Hrs

Prerequisites: Chemistry 112 or 122 and Chemistry 211. Livestock feeds and their nutrients. Functions of and requirements for nutrients. Evaluation of feeds. Feeding practices. Formulation of rations of beef and dairy cattle, horses, poultry, sheep and swine. (3-2)

AVIATION

Aviation 101 Private Pilot Ground Training 3 Sem Hrs

Prerequisite: None. Designed to provide the student with basic principles of flight that are of concern to the private pilot. Special emphasis will be placed on preparing one to pass the F.A.A. Private Pilot written examination. Emphasis is given to: Pre-flight facts, Federal Aviation Agency regulations, Meteorology, Flight Computer, Navigation and Radio Navigation. (3-0)

Aviation 110 Commercial Pilot Ground Training 3 Sem Hrs

Prerequisite: Knowledge of Private Pilot Ground School recommended. Designed to prepare students for the Federal Aviation Administration Commercial Pilot written examination leading to licensure of a commercial pilot by the Federal Aviation Administration. Covers applicable flight information publications, meteorology and weather, navigation, aerodynamics and principles of flight, aircraft instruments. (3-0)

Aviation 201 Instrument Ground School 4 Sem Hrs

Prerequisite: Private Pilot License or Commercial Pilot License. Designed to prepare students for the Federal Aviation Administration Instrument Pilot Ground School written examination leading to licensure of a pilot by the Federal Aviation Administration. (4-0)

BASIC SCIENCE

Bas Sci 101 Integrated Basic Science 5 Sem Hrs

Prerequisite: One year high school biology and chemistry or permission of the instructor. A study of the fundamental principles of physics, chemistry, microbiology, and pathology as they apply to the functioning of the human body. (4-3)

Bas Sci 102 Integrated Basic Science 5 Sem Hrs

Prerequisite: Basic Science 101. Continuation of Basic Science 101. A study of the fundamentals of human anatomy and physiology. (4-3)

BIOLOGY

Biol 105 Anatomy and Physiology for Medical Assistants 2 Sem Hrs

Prerequisite: None. Designed to provide a basic knowledge of

surface anatomy, the body system and physiology. Medical terminology is stressed with emphasis on the spelling and meaning of commonly used prefixes, suffixes, root words, and their combining forms. (2-0)

Biol 111 Principles of Biology 4 Sem Hrs

Prerequisite: None. An introduction to the fundamental concepts underlying biology. Major topics considered will be: evolutionary survey of plant and animal kingdoms, cellular structure and metabolism, and the biology of populations. The role of biology in our present world will be the unifying theme for the course. Required of all biology majors and applicable as science credit for non-majors. (3-3)

Biol 112 General Biology 4 Sem Hrs

Prerequisite: Biology 111. A course which deals with the application of the concepts of biology to humans, specifically as the concepts relate to human structure, function, and heredity. (3-3)

Biol 151 Botany 4 Sem Hrs

Prerequisite: Biology 111. Chemistry recommended. A study of the basic physiological processes and the structure necessary to carry on these processes. Survey of the plant kingdom with emphasis upon their evolutionary relationships and their life cycles. The environmental importance of plants is also discussed. (2-6)

Biol 161 Zoology 4 Sem Hrs

Prerequisite: Biology 111, Chemistry recommended. A course which deals with classification, evolutionary relationships and a comparison of structure and of function of the major groups of animals. (2-6)

Biol 241 Physiology 4 Sem Hrs

Prerequisite: Biology 161 or a year of college biology or permission of instructor. A study of the function of the major organ systems of animals with special emphasis on the human body. The laboratory will stress the experimental approach to gathering and analyzing physiological data. (3-3)

Biol 261 Comparative Vertebrate Anatomy 4 Sem Hrs

Prerequisite: Biology 161. Evolution of the higher taxonomic

groups of chordates and a comparative study of their gross morphology. Emphasis on dissection of various vertebrates. (2-6)

Biol 271 Genetics 4 Sem Hrs

Prerequisite: Biology 112, or Biology 151 or Biology 161. A study of classical and molecular genetics. Hereditary material will be considered with regard to its proliferation, its control of protein synthesis, and with regard to the effect of accumulated genetic changes upon evolution. (3-3)

CHEMISTRY

Chem 101 General Chemistry 5 Sem Hrs

Prerequisite: One year of high school algebra. Fundamental principles including laws of chemical combination, states of matter, and chemical phenomena with reference to modern theoretical principles. Designed as a preparatory to Chemistry 111, for those students with no previous work in Chemistry and to satisfy a science requirement in certain curricula. These students using Chemistry 101 as a prerequisite for Chemistry 111 receive credit only for Chemistry 111 toward graduation from Delta College. (5-2)

Chem 102 General Chemistry 3 Sem Hrs

Continuation of Chemistry 101. Emphasis on equilibrium metals, and thermal reactions and non-metals. Also selected topics in organic and biochemistry. (3-2)

Chem 111 General and Inorganic Chemistry 4 Sem Hrs

Prerequisites: High school chemistry or Chemistry 101 and one year of high school algebra with satisfactory placement test scores. Principles concerning structure of matter, chemical and physical changes that matter undergoes, and application of these principles in the laboratory. For students who will need advanced chemistry courses beyond one year of general chemistry, chemistry majors, chemical engineers, pre-dentistry, pre-medicine, pre-veterinary, chemical technology, medical technology and forestry. (4-3)

Chem 112 General and Inorganic Chemistry 4 Sem Hrs

Prerequisite: Chemistry 111. Continuation of Chemistry 111. Descriptive study of metals and non-metals, electrochemistry, and of equilibrium and further study of principles. (4-3)

Chem 115 Engineering Problems 1 Sem Hrs

Prerequisite: Chemistry 111. Intended to familiarize the student with equilibria, electrochemistry, redox equations and titrations. (1-0)

Chem 122 General and Inorganic Chemistry with Analytical Chemistry 5 Sem Hrs

Prerequisite: Chemistry 111 and approval of the chemistry department. Descriptive chemistry of metals and non-metals including all phases of equilibria. Qualitative Analysis of the cations and volumetric and gravimetric quantitative analysis experiments in the laboratory. (4-6)

Chem 201 Organic Chemistry 5 Sem Hrs

Prerequisite: Chemistry 112 or 122. A course in the basic principles of organic reactions and laboratory techniques meeting the preprofessional needs of medical technologists, dental students, and others. (4-4)

Chem 202 Organic Chemistry 5 Sem Hrs

Prerequisite: Chemistry 201. A continuation of Chemistry 201. (4-4)

Chem 211 Organic Chemistry 5 Sem Hrs

Prerequisites: Chemistry 112 or Chemistry 122 with a grade of C or better. A more rigorous course featuring reaction mechanism and structural theory of organic chemistry. Required for majors in chemistry, chemical engineering, and chemical technology. (4-4)

Chem 212 Organic Chemistry 5 Sem Hrs

Prerequisite: Chemistry 211. A continuation of Chemistry 211. (4-4)

Chem 221 Qualitative Analysis 4 Sem Hrs

Prerequisite: Chemistry 112. Principles of chemical equilibria with semi-micro chemical analysis of representative cations and anions. (3-6)

Chem 222 Quantitative Analysis 4 Sem Hrs

Prerequisite: Chemistry 122 or Chemistry 221. Similar to Chemistry 223 but adapted to the needs of medical technology students. Not accepted for chemistry or pre-medical majors. (3-6)

Chem 223 Quantitative Analysis 4 Sem Hrs
Prerequisite: Chemistry 122 or Chemistry 221. Theory and practice of volumetric and gravimetric analysis with major emphasis on volumetric analysis. (3-6)

GEOGRAPHY

Geog 111 Physical Geography 4 Sem Hrs
Prerequisite: None. Study of the natural environment which is important to man and his activities; introduction to maps and physical features; earth-sun-moon relationships; earth materials; land forms; drainage; and major natural resources. Introduction to weather and climate, soils and vegetation — their character, causes, significance and distribution. (4-1)

Geog 113 World Regional Geography 4 Sem Hrs
Prerequisite: None. Essential geographic characteristics and significant problems of the major regions of the world; cultural and natural resources of the nations of the world. (4-0)

Geog 211 Economic Geography 4 Sem Hrs
Prerequisite: Geography 111 or 113, or permission of instructor. Fundamentals of economic activities of the major world geographic regions; a study of activities, such as, agriculture, forestry, fishing, mining, manufacturing, transportation, and trade. (4-0)

Geog 221 Geography of South America 3 Sem Hrs
Prerequisite: Geography 111 or 113. Regional geographic interpretation of the area as a continent. Study of relationships of physical, economic, social and political environment to human activity. (3-1)

Geog 222 Geography of Asia 3 Sem Hrs
Prerequisite: Geography 111 or 113. Similar to Geography 221 but applied to the continent of Asia. (3-1)

Geog 223 Geography of Europe 3 Sem Hrs
Prerequisite: Geography 111 or 113. Similar to Geography 221 but applied to Europe. (3-1)

Geog 224 Geography of Africa 3 Sem Hrs
Prerequisite: Geography 111 or 113. Similar to Geography 221 but applied to the continent of Africa. (3-1)

Geog 225 Geography of Middle America 3 Sem Hrs
Prerequisite: Geography 111 or 113. Similar to Geography 221 but applied to the Mexico, Central America, and insular Caribbean areas. (3-1)

Geog 226 Geography of Anglo America 3 Sem Hrs
Prerequisite: Geography 111 or 113. Similar to Geography 221 but applied to the United States and Canada.

Geog 231 Climatology 3 Sem Hrs
Prerequisite: Geography 111 and consent of instructor. Analysis of climate elements and controls; classification and distribution of climate types; fundamentals of geophysics. Offered in Fall semester only. (2-2)

Geog 291 Special Projects and Seminars 1-4 Sem Hrs
Independent, informal study and research for superior students on a specific and significant geographical topic. May not be undertaken prior to completion of three semesters of geography courses. Consent of instructor required.

Geog 292 Foreign — Domestic Travel Seminars 1-6 Sem Hrs
Prerequisite: Introductory course in appropriate discipline and/or permission of the Division. Designed to provide academic credit for structured travel seminars. Students may receive up to six hours credit in one discipline or in a combination of disciplines provided that prior approval for such credit has been given by the appropriate division.

GEOLOGY

Geol 111 Physical Geology 4 Sem Hrs
Prerequisite: None. A study of the materials and agents responsible for the development of topographic and structural features of the earth. Introductory study of common rocks and minerals. Introduction to maps. One field trip is required. (3-2)

Geol 112 Historical Geology 4 Sem Hrs
Prerequisite: Geology 111. Study of the successive stages in development of North America as a typical continent, and the evolution of life. Interpretation of topographic and geologic maps and identification of invertebrate fossils. One field trip is required. (3-2)

Geol 211 Mineralogy

4 Sem Hrs

Prerequisite: One semester of college chemistry (may be taken concurrently) or permission of the instructor. Introduction to the common crystal systems of minerals, followed by a study of the physical and chemical properties, occurrence, formation, and uses of approximately 200 important economic and rock-forming minerals. (1-4)

Geo 221 Invertebrate Paleontology

3 Sem Hrs

Prerequisite: Geology 112 or permission of the instructor. Morphology, classification, development, and geologic range of the major invertebrate groups. (2-2)

Geol 231 World Mineral Resources (Non-metallic)

3 Sem Hrs

Prerequisites: Geology 111 and 112 or permission of instructor. Study of the origin and geographic distribution of petroleum, coal, building stones, lime and cement, clay, sand and gravel, salt and gypsum fertilizers, gem stones, and other non-metallic minerals. Occasional field trips. (3-0)

Geol 232 World Mineral Resources (Metallic)

3 Sem Hrs

Prerequisites: Geology 111 and 112 or permission of instructor. Study of the origin and geographic distribution of iron, copper, lead, zinc, aluminum, radioactive minerals, and other metallic resources. Occasional field trips. (3-0)

PHYSICAL SCIENCE**Phy Sc 101 Physical Science**

4 Sem Hrs

Prerequisite: High school algebra and plane geometry. For students interested in understanding the major concepts of geology, chemistry, astronomy, and physics. It is intended to give the student a better grasp of the scientific method and to afford practice in critical thinking. (3-2)

Phy Sc 102 Physical Science

4 Sem Hrs

Prerequisite: Physical Science 101. Continuation of Physical Science 101. (4-0)

PHYSICS**Physics 101 Applied Physics**

5 Sem Hrs

Prerequisite: Mathematics 92 and Mathematics 93 or equiv-

alent. Designed to cover the same subjects as high school physics course with emphasis on mechanics, heat and fluids as required for technical programs. (5-2)

Physics 111 General Physics

4 Sem Hrs

Prerequisite: Physics 82 or high school physics, and high school algebra I and II. Trigonometry recommended. Designed to familiarize the student with basic physical principles. Deals with mechanics, heat and sound. (4-3)

Physics 112 General Physics

4 Sem Hrs

Prerequisite: Physics 111. Continuation of Physics 111. Covers magnetism, electricity, light and modern physics. (4-3)

Physics 211 Physics

5 Sem Hrs

Prerequisite: High school physics or equivalent, and Mathematics 161 or its equivalent. For engineers and science majors. Mechanics, heat and sound. (5-3)

Physics 212 Physics

5 Sem Hrs

Prerequisite: Physics 211 and Mathematics 162. Continuation of Physics 211. Magnetism, electricity, light, and modern physics. (5-3)

Physics 215 Engineering Mechanics, Statics

3 Sem Hrs

Prerequisite: Physics 211 and Mathematics 162. Mathematics 162 may be taken as a parallel course. Covers forces, components, vectors, moments, couples, methods of sections, stress in frame structures, cables, friction, first moments, products of inertia, and centroids. (3-0)

Physics 291 Special Projects and Seminars

1-4 Sem Hrs

Prerequisite: Permission of Science Division. Independent study and/or research on a topic or project which has been approved by the Science Division.

SOCIAL SCIENCE DIVISION

Division Chairman — Richard E. Klein, Associate Professor

Professor

Dr. Louis W. Doll

Dr. Harry G. Parks

Dr. Robert M. Roman

Associate Professor

Paul E. Carrico
 Patricia Drury
 Clarence W. Hackbarth
 Dr. Mark S. Schafer

Assistant Professor

Dr. Jean G. Cheger
 Calvin A. Hoerneman
 Lawrence E. Glynn
 Joseph M. Godard
 David C. Howard
 E. Paul Leek

Instructor

Harold D. Arman
 Karl A. Boedecker
 Jeremy W. Kilar
 Jon W. Gosser
 Judith A. Wiley
 John R. Wilhelm
 Jay J. Zumeta

LAW ENFORCEMENT PROGRAM

Delta College offers a Law Enforcement program that is designed to give specialized knowledge of law enforcement combined with a broad general educational background. The program offers practical and technical instruction designed to meet ever-increasing demands and continuous upgrading by law enforcement agencies, including skills and attitudes required for employment or advancement.

Students graduating from Delta College's two-year Law Enforcement curriculum receive an Associate Degree in Applied Science and are eligible for immediate employment or transfer to leading state university Police Science Programs.

First Semester

	Sem Hrs
Eng 111 — Freshman Composition	3
Pol Sc 103 — Introduction to American Government	3
Mathematics 119 — Elective	3
LE 110 — Introduction to Law Enforcement	3
Sp 112 — Principles of Public Speaking	3
Physical Fitness 101	1
	16 Hrs

Second Semester

	Sem Hrs
Eng 112 — Freshman Composition	3
Bio 111 — Principles of Biology	4
LE 111 — Police Organization and Administration	3
General Chemistry 101 or Geology 111	5-4
Sport Judo 125	1
	16-15 Hrs

Third Semester

	Sem Hrs
Psych 211 — General Psychology	4
Soc 211 — Principles of Sociology	3
*History 111, 112, 221, 222	3-4
LE 210 — Introduction to Crime Investigation	3
LE 250 — Juvenile Delinquency	3
Wrestling 128	1
	17 Hrs

Fourth Semester

	Sem Hrs
LE 270 — Evidence and Criminal Procedure	3
LE 271 — Criminal Law (Mich.)	3
PE 165 — First Aid and Safety	2
PE 136 — Gymnastics	1
**Approved Elective	3
**Approved Elective	3
	15 Hrs

*History 111 and 112 are 4 credit courses.

**For transfer to Michigan State University, a course in Social Studies and a course in Humanities is needed.

SOCIAL SCIENCE DIVISION**ECONOMICS**

Econ 111 Essentials of Economics	3 Sem Hrs
Prerequisite: None. The American economic system as a mixed economy where free enterprise and free markets predominate, but containing also minority elements of monopoly, government ownership, and government regulation and control; the significance of these features for economic progress, stability, justice, and freedom. (3-0)	

Econ 112 Essentials of Economics	3 Sem Hrs
Prerequisite: Economics 111. Continuation of Economics 111, including a survey of selected current economic problems. (3-0)	

Econ 221 Principles of Economics	4 Sem Hrs
Prerequisite: Sophomore standing or permission of instructor.	

The allocation problems of every society with emphasis on their solutions under the American capitalistic economy; preliminary analysis of the demand and supply activities of individuals, firms, groups, and governments; measuring national income and product, and explaining their fluctuations; monetary and banking institutions in relation to specialization and exchange, business cycles, and government fiscal and monetary policies. (4-0)

Econ 222 Principles of Economics 4 Sem Hrs

Prerequisite: Economics 221. The commodity markets; prices as causes and effects of supply and demand; determinants of consumer buying and of the actions of firms as buyers and sellers; factor markets; wages, rent, and interest as special types of prices; the role of profits and profit expectations, from partial to general equilibrium; from static to dynamic analysis; growth and development problems; international trade and finance; alternative economic systems. (4-0)

Econ 231 Industrial Relations 3 Sem Hrs

Prerequisite: Economics 111 or 221. Provides a study of the human factor in industry. Problems of wages, hours, unemployment, working conditions; federal and state laws which relate to labor and management relations; policies and practices of unions and management. (3-0)

Econ 232 Case Studies in Labor Relations 3 Sem Hrs

Prerequisite: Permission of instructor. Application of principles of industrial relations to collective bargaining case studies. Actual cases are discussed and evaluated in reference to current labor laws and personnel practices. (3-0)

Econ 240 Agriculture in the Economy 4 Sem Hrs

Prerequisite: Economics 221. Economic and management principles in agriculture. Demand for farm product, principles of marketing and price determination. Identification of individual and societal problems related to agriculture. Alternative approaches to their solution. (4-0)

Econ 290 Money and Banking 3 Sem Hrs

Prerequisite: Economics 111 or 221. The role of money and credit in the economic system; emphasizing the operation of the federal reserve system and private financial institutions. (3-0)

HISTORY

History 111 A survey of Early Western Civilization 4 Sem Hrs
Prerequisite: None. Political, social, economic, and cultural history of Europe from prehistoric times to the seventeenth century. Particular attention given to the characteristics of civilizations and their contributions to the modern world. (4-0)

Hist 112 A survey of Later Western Civilization 4 Sem Hrs

Prerequisite: None. Political, social, economic, and cultural history of Europe from the Wars of Religion to the present time. Particular attention given to colonial, national, democratic movements, and their influence on current events. (4-0)

Hist 113 History of Michigan 2 Sem Hrs

Prerequisite: None. History from the time of first known human inhabitants through French and British domination, and finally American acquisition of Michigan leading to territorial status and statehood. Emphasis on Michigan history as a representative part of human culture. (2-0)

Hist 221 History of the United States to 1865 3 Sem Hrs

Prerequisite: None. History of the United States from its immediate European backgrounds to the end of the Civil War to the present time. Emphasis on Social history and American international relations. (3-0)

Hist 222 History of the United States from 1865 to the Present 3 Sem Hrs

Prerequisite: None. A continuation of History 221. United States history from the end of the Civil War to the present time. Emphasis on social history and American international relations. (3-0)

Hist 232 History of Russia 3 Sem Hrs

Prerequisite: History 111 or 112. Traces the rise of the Muscovite State from its Kievian origins through the reigns of Peter and Catherine the Great to the fall of the Romanov dynasty and the establishment of Bolshevism. Emphasis will be placed on the Communist period in the larger context of the Russian experience. (3-0)

Hist 291 Special Projects or Seminars 1-4 Sem Hrs

Prerequisite: Permission of Social Science Division. Inde-

pendent study and research on a topic or project which has the prior approval of the Social Science Division.

LAW ENFORCEMENT

LE 101 Police Recruit Training 4 Sem Hrs

Prerequisite: None. Designed to give the student the basic training necessary to assume the duties of a patrolman. Topics included are constitutional law, criminal law, laws of arrest, search and seizure, investigative techniques, first aid, firearms, motor vehicle laws, defensive tactics, and patrol techniques. Class meets for a minimum of 142 hours in a three-week period.

LE 110 Introduction to Law Enforcement 3 Sem Hrs

Prerequisite: None. Philosophical and historical backgrounds; agencies and processes; administrative and technical problems; and career orientation. (3-0)

LE 111 Police Organization and Administration 3 Sem Hrs

Prerequisite: Law Enforcement 110. An analysis and study of the functional divisions of the modern police department. Functions to be studied will include management operations, coordination of activities, communications, recruiting, training, public relations and a look at the future of law enforcement. (3-0).

LE 180 Retail Security 2 Sem Hrs

Prerequisite: None. This course covers the organization and management of retail security for all types of retail outlets, large and small. Particular attention is given to retail security programs already functioning, the effectiveness and scope of these programs, and the changing problems in retail security. (2-0)

LE 182 Fire Prevention and Safety 2 Sem Hrs

This course covers problems and procedures of the administration of fire and accident prevention with particular reference to conditions as they exist in the tri-County Area. Summary of laws governing fire protection, the development of safety policy, rules and regulations, together with organization for fire and accident control will be covered. (3-0)

LE 184 Industrial Security

3 Sem Hrs

Prerequisite: None. Theoretical approach to the role of security officers in business and industry. Plant and business protection. Legal responsibilities and authority of plant security officers. Problems of business and industrial espionage and petty thefts. Report writing. (3-0)

LE 185 Industrial Security II

3 Sem Hrs

Prerequisite: LE 184. Practical approach to the role of security officers concerning fire prevention, safety programs, first-aid, and internal security. (3-0)

LE 210 Introduction to Criminal Investigation

3 Sem Hrs

Introduction to criminal investigation procedures including theory of an investigation, conduct at crime scenes, collection and preservation of physical evidence; methods used in police science laboratory; finger prints, ballistics, documents, seratology, photography, and related forensic sciences. (3-0)

LE 220 Crime Laboratory Techniques

3 Sem Hrs

Prerequisite: Law Enforcement 210. Field techniques for the preservation and collection of physical evidence at the scene of crime or civil disturbance. Application of techniques of crime photography, finger print lifting, plaster casting, blood stain preservation, and other methods of laboratory analysis. (3-3)

LE 250 Introduction to Juvenile Delinquency

3 Sem Hrs

Prerequisite: None. Juvenile delinquency theories, work of youth agencies, legislative involvements, and new developments in the prevention of juvenile crime. (3-0)

LE 270 Evidence and Criminal Procedure

3 Sem Hrs

Prerequisite: None. Deals with rules of evidence and particular import at the operational level in law enforcement and with criminal procedure in important areas such as arrest, force, and search and seizure. (3-0)

LE 271 Criminal Law

3 Sem Hrs

Prerequisite: None. Elements and proof in crime of frequent concern in law enforcement with reference to principal rules of criminal liability. Importance of criminal law at the enforcement level is considered from crime prevention to courtroom appearance. (3-0)

LE 294 Command Officers Training	3 Sem Hrs	Pol Sci 221 Comparative Government	3 Sem Hrs
Deals in both the theory and practice of good business procedures as applied to police operations and to improve the caliber of command officers. To be also concerned with conditioning the attitudes of command officers and creating an awareness of the responsibilities of command positions within a police department. (3-0)			

POLITICAL SCIENCE

Pol Sci 101 Contemporary Political Problems 2 Sem Hrs

Prerequisite: None. A study of the major political problems, domestic and foreign, which are currently facing the American political system. Ideological, economic, and social factors are stressed. (This course does not satisfy the State requirements in political science. (2-0)

Pol Sci 103 Introduction to American Government 3 Sem Hrs

Prerequisite: None. (Not open to students with credit in Political Science 111.) Organization and functions of the political, electoral, legislative, administrative, and judicial processes of the federal, state, and local governments. (This course satisfies the State requirements in political science.) (3-0)

Pol Sci 111 American Government and Politics 4 Sem Hrs

Prerequisite: None. (Not open to students with credit in Political Science 103.) A study of the American political system, utilizing the techniques of political science. Particular emphasis is placed on the organization and functioning of the electoral, legislative, administrative, and judicial processes of the national government. Comparisons are made between federal, state, and local governments. Recommended for pre-law or social science majors or minors. (This course satisfies the State requirements in political science.) (4-0)

Pol Sci 112 State and Local Government 3 Sem Hrs

Prerequisite: A course in political science or permission of the instructor. Development, structure, organization and problems of the state and local units of governments along with their relation to the federal government. (3-0)

Pol Sci 221 Comparative Government	3 Sem Hrs
Prerequisite: A course in political science or history. Deals principally with governments of Great Britain, France, and Soviet Russia. Emphasis on theories of democracy, fascism, communism and socialism. (3-0)	

Pol Sci 225 International Relations 3 Sem Hrs

Prerequisite: A course in political science or history. Introduction to the study of politics among nations, designed to provide a working knowledge of concepts necessary to understanding current world affairs such as the state system, colonialism, imperialism, and regional arrangements. Includes a survey of international organizations including the United Nations. (3-0)

Pol Sci 227 American Political Parties 3 Sem Hrs

Prerequisite: A course in political science or United States history. History, structure, and functions of political parties in the United States; interaction of political parties, pressure groups, and public opinion. (3-0)

PSYCHOLOGY

Psych 101 Applied Psychology 3 Sem Hrs

An introductory course in basic principles of human relations that may be used in business and industry. Emphasis on understanding motivation and behavior in practical situations; help in developing an appreciation of our own behaviour so that students may work more successfully with supervisors and with peers. (3-0)

Psych 151 Personnel Psychology 3 Sem Hrs

Prerequisite: None. Covers latest developments in industrial relations and manpower management from the psychological point of view. Job analysis, organizational planning, staffing, interviewing, testing, induction, employment, labor relations, contract negotiations, compensation and employee morale are discussed. (3-0)

Psych 152 Industrial Psychology 3 Sem Hrs

Prerequisite: None. Personnel Psychology 151 recommended. Application of personnel principles to selection, placement, training, supervision, evaluation and motivation of personnel. Introduction to problems of human relations in industry. (3-0)

Psych 199 Field Work	1 to 3 Sem Hrs	Soc 212 Social Problems	3 Sem Hrs
Supervised field work in tutoring the disadvantaged. Arrangements are made in cooperation with local boards of education and units of economic opportunity groups. Credits are non-transferable.			
Psych 211 General Psychology	4 Sem Hrs	Soc 231 Cultural Anthropology	3 Sem Hrs
Prerequisite: Sophomore standing or permission of instructor if second term freshman. Principles underlying experience and behavior. Designed to give an understanding of human behavior as affected by learning, motivation, intelligence, and personality. (4-0)			
Psych 223 Child Psychology	3 Sem Hrs	Soc 291 Special Projects and Seminars	1-3 Sem Hrs
Prerequisite: Psychology 211. Facts and generalizations concerning growth of children from conception to adolescence; deals with physical, mental, social and emotional development. (3-0)			
Psych 231 Psychology of Personality	3 Sem Hrs	TECHNICAL DIVISION	
Prerequisite: Psychology 211. Application of psychological principles to interpersonal behavior; study of factors in the development of constructive personal adjustment as influenced by human relations in home, school and community. (3-0)			
SOCIOLOGY			
Soc 121 Preparation for Marriage and Family Living	3 Sem Hrs	Associate Professor	
Prerequisite: None. A practical, rather than theoretical, study of family relationships in anticipation of preparation for, and participation in marriage and family life. Consideration will be given to the social, psychological, biological and economic factors which contribute to the success or failure in family relationships. Credits earned are transferable as elective credits but usually do not apply toward a major or minor in sociology. (3-0)			
Soc 211 Principles of Sociology	3 Sem Hrs	William J. Streib	
Prerequisite: None. Scientific study of human relationships and institutions. Includes evaluation of current literature as a reflection of man's culture. Basic for all courses in social work. (3-0)			
Assistant Professor		Assistant Professor	
Thomas R. Freiwald Wilbert C. Kleinsmith Richard E. Miller Donald A. Miotto Joseph R. E. Paquin Arnold A. Schwartz Robert N. Tinker			
Instructor		Instructor	
John T. Hoffmann Arthur M. Leinberger Alvin H. Schmidt Gary D. Thompson			
TECHNICAL CAREER PROGRAMS			
Associate Degree and Certificate Curricula			
The purpose of Delta's Technical Programs. The technical curricula at Delta College evolved at the request of local industry.			

After many months of study and development these programs are being offered to interest students on a college level and prepare a person to enter a well-paid position in industry. To achieve this end, the courses are practical in nature and job oriented in purpose.

Some high school graduates finish the twelfth grade neither prepared for college nor trained for immediate employment. This may be due to a variety of reasons. The trend toward fewer unskilled jobs and greater technical training requirements means that some high school graduates cannot find employment. Successful completion of the curriculum enables vocationally oriented students to enter well paid positions as members of the American industrial team. The need for skilled technicians will continue to increase along with the need for professionally trained personnel.

These programs are broad in nature, serve a variety of industrial requirements, and will provide the necessary base for future upgrading of the individual as demanded by a changing technology. Changes are made periodically as needs are identified and reviewed to keep the curricula immediately practical.

Cooperative positions are open to qualified students. Inquiries regarding available cooperative jobs should be made at the College.

Successful completion of one of the following programs qualifies a student for the Associate in Applied Science degree or a certificate of Completion.

ARCHITECTURAL TECHNOLOGY CURRICULUM

Associate Degree Program

Some employment opportunities for technicians in Architectural Technology are:

- Architect's assistant
- Building inspector
- Building materials salesman

First Semester	Sem Hrs
Arch Tech 105 — Architectural Drafting I	7
Arch Tech 101 — Materials and Methods of Architectural Construction	2
Math 101 — Technical Mathematics I	5
PE — Physical Education	1
	15

Second Semester	Sem Hrs
Arch Tech 106 — Architectural Drafting II	7
Arch Tech 111 — Mechanical and Electrical Equipment for Buildings	4
Eng 111 — Freshman Composition	3
Art 153 — History of Architecture	2
PE — Physical Education	1
	17
Third Semester	Sem Hrs
Math 102 — Technical Mathematics II	5
Eng 113 — Technical Writing	3
	8
Fourth Semester	Sem Hrs
Arch Tech 205 — Architectural Drafting III	7
Arch Tech 221 — Site Preparation	2
Physics 101 — Applied Physics	5
Arch Tech 202 — Specifications and Contracts	2
	16
Fifth Semester	Sem Hrs
Arch Tech 206 — Architectural Drafting IV	7
Arch Tech 211 — Elements of Structural Design	4
Arch Tech 203 — Estimating	2
Pol Sci 103 — Introduction to American Government	3
	16

AUTOMOTIVE SERVICE TECHNOLOGY CURRICULUM

Associate Degree Program

First Semester	Sem Hrs
Auto Tech 101 — Automotive Service Orientation and Maintenance	3
Auto Tech 103 — Basic Engines	3
Auto Tech 105 — Electrical Systems	2
Auto Tech 106 — Automotive Electricity	4
Eng 111 — Freshman Composition	3
PE — Physical Education	1
	16

Second Semester	Sem Hrs
Auto Tech 110 — Diagnosis and tune up	3
Auto Tech 111 — Cranking and charging systems	3
Auto Tech 112 — Laboratory Practice	2
Auto Tech 113 — Fuel Systems	3
Math 101 — Technical Mathematics I	5
PE — Physical Education	1
	17

Third Semester	Sem Hrs
Auto Tech 206 — Wheel Alignment	3
Auto Tech 207 — Brake Service	3
Auto Tech 208 — Laboratory Practice	2
Auto Tech 209 — Electrical Circuits	3
Pol Sci 103 — Introduction to American Government	3
Eng 112 or 113 — Freshman Composition or Technical Writing	3
	17

Fourth Semester	Sem Hrs
Auto Tech 211 — Driveline Fundamentals	7
Auto Tech 212 — Laboratory Practice	2
Auto Tech 213 — Service Management	4
Psych 101 — Applied Psychology	3
	16

AUTOMOTIVE SERVICE CURRICULUM

Certificate Program

First Semester	Sem Hrs
Auto Tech 101 — Service Orientation and Maintenance	3
Auto Tech 103 — Engines	3
Auto Tech 105 — Laboratory Practice	2
Auto Tech 106 — Automotive Electricity	4
Eng 72 or 73 — Improvement English	4 or 3
PE — Physical Education	1
	17 or 16

Second Semester	Sem Hrs
Auto Tech 110 — Diagnosis and tune up	3
Auto Tech 111 — Cranking and charging systems	3
Auto Tech 112 — Laboratory Practice	2
Auto Tech 113 — Fuel Systems	3
Math 91 — Arithmetic	2
	13

Third Semester	Sem Hrs
Auto Tech 206 — Wheel Alignment	3
Auto Tech 207 — Brake Service	3
Auto Tech 208 — Laboratory Practice	2
Auto Tech 209 — Electrical Circuits	3
Pol Sci 103 — Introduction to American Government	3
PE — Physical Education	1
	15

Fourth Semester	Sem Hrs
Auto Tech 211 — Driveline Fundamentals	7
Auto Tech 212 — Laboratory Practice	2
Auto Tech 213 — Service Management	4
Psych 101 — Applied Psychology	3
	16

AUTOMOTIVE SERVICE SPECIALIST CURRICULUM

Certificate Program

First Semester	Sem Hrs
Auto Tech (Specialist) 101 — Service Orientation and Maintenance	12

Second Semester	Sem Hrs
Auto Tech (Specialist) 102 — Electrical and Fuel System Service	12

Third Semester	Sem Hrs
Auto Tech (Specialist) 103 — Suspension and Brake Service	12

DRAFTING CURRICULUM

Certificate Program

First Semester (September)	Sem Hrs
Dr 101 — Introduction to Drafting	10
Mech Tech 111 — Manufacturing Processes	3

Second Semester (January)	Sem Hrs
Dr 102 — Drafting I	10
Math 91 — Arithmetic	2

Third Semester (April)	Sem Hrs
Dr 103 — Drafting II	10
Mech Tech 213 — Machine Tools	3

INSTRUMENTATION TECHNOLOGY CURRICULUM

Associate Degree Program

Some employment opportunities for technicians in instrumentation Technology are:

- Instrument Application Technician
- Instrument Design Technician
- Instrument Calibration and Repair Technician
- Instrument Company Sales Representative
- Instrument Repair Shop Technician
- Aircraft Instrument Maintenance Technician

First Semester	Sem Hrs
Math 101 — Technical Mathematics I	5
Dra 105 — Industrial Drafting	3
Eln Tech 111 — Fundamentals of DC Circuits	4
Eln Tech 115 — Electronic Devices	2
PE — Physical Education	1
	15

Second Semester	Sem Hrs
Math 102 — Technical Mathematics II	5
Eln Tech — Fundamentals of AC Circuits	3
Eln Tech 116 — Electronic Devices and Circuits	2
Mech Tech 213 — Machine Tools	3
Tech Tech 220 — Introduction to Fluid Power	3
PE — Physical Education	1
	17

Third Semester	Sem Hrs
Math 103 — Technical Mathematics III	5
Eln Tech 213 — Solid State Devices	3
Eln Tech 241 — AC and DC Machines and controls	2
Phys 111 — General Physics	4
Eng 111 — Freshman Composition	3
	17

Fourth Semester	Sem Hrs
Eln Tech 214 — Design of Electronic Circuits	4
Eln Tech 215 — Electronic Control and Automation	4
Eln Tech 252 — Basic Industrial	4
Bus Mach 175 — Machine Calculation	2
Electives	3-4
	17-18

Fifth Semester	Sem Hrs
Dra 216 — Electrical Drafting	2
Eln Tech 231 — Electronic Fabrication	3
Sp 101 — Fundamental of Speech for Engineering Students	3
Econ 111 — Principles of Economics	3
Pol Sci — Introduction to American Government	3
Eng 113 — Technical Writing	3
	17

ELECTRONIC TECHNOLOGY CURRICULUM

Associate Degree Program

Some employment opportunities for technicians in Electronic Technology are:

Electronic Layout Technician
 Electronic Instrumentation Technician
 Electronic Design Technician
 Electronic Laboratory Technician
 Electronic Tester and Trouble Shooter
 Electronic Field Serviceman
 Engineering Aide

First Semester	Sem Hrs
Math 101 — Technical Mathematics I	5
Dra 105 — Industrial Drafting	3
Eln Tech 111 — Fundamentals of DC Circuits	4
Eln Tech 115 — Electronic Devices	2
PE — Physical Education	1
	15

Second Semester	Sem Hrs
Math 102 — Technical Mathematics II	5
Eln Tech 112 — Fundamentals of AC Circuits	3
Eln Tech 116 — Electronic Devices & Circuits	2
Mech Tech 213 — Machine Tools	3
Eng 111 — Freshman Composition	3
	16

Third Semester	Sem Hrs
Math 103 — Technical Mathematics III	5
Eln Tech 213 — Solid State Devices AC & DC	3
Eln Tech 241 — Machines & Controls	2
Phys 111 — General Physics	4
Eng 113 — Technical Writing	3
	17

Fourth Semester	Sem Hrs
Eln Tech 214 — Design of Electronic Circuits	4
Eln Tech 215 — Electronic Control & Automation	4
Mech Tech 251 — Mechanics	3
Chem 101 — General Chemistry	5
PE — Physical Education	1
	17

Fifth Semester	Sem Hrs
Dr 216 — Electrical Drafting	2
Eln Tech 231 — Electronic Fabrication	3
Sp 112 — Principles of Public Speaking	3
Econ 111 — Essentials of Economics	3
Pol Sc 103 — Introduction to American Government	3
Bus Mach 175 — Machine Calculation	2
	16

MECHANICAL TECHNOLOGY CURRICULUM

Associate Degree Program

Some employment opportunities for technicians in Mechanical Technology are:

Materials Testing Technician
Field Serviceman
Product Designer
Mechanical Laboratory Technician

First Semester	Sem Hrs
Dr 105 — Industrial Drafting	3
Mech Tech 111 — Manufacturing Processes	3
Math 101 — Technical Mathematics I	5
Mech Tech 220 — Introduction to Fluid Power	3
Mech Tech 213 — Machine Tools	3
	17

Second Semester	Sem Hrs
Dr 106 — Industrial Drafting	3
Math 102 — Technical Mathematics II	5
Mech Tech 215 — Methods Engineering	3
Mech Tech 221 — Materials & Metallurgy	3
El Tech 235 — Electrical Circuits	3
	17

Third Semester	Sem Hrs
Dr 156 — Descriptive Geometry	3
Mech Tech 205 — Basic Kinematics	3
Mech Tech 251 — Mechanics	3
Phys 101 — Applied Physics	5
PE — Physical Education	1
	15

Fourth Semester	Sem Hrs
Mech Tech 206 — Machine Design	3
Mech Tech 252 — Strength of Materials	3
Eng 111 — Freshman Composition	3
PE — Physical Education	1
Elective	2, 3
	12, 13

Fifth Semester	Sem Hrs
Eng 113 — Technical Writing	3
Econ 111 — Essentials of Economics	3
Sp 112 — Principles of Public Speaking	3
Pol Sc 103 — Introduction to American Government	3
Chem 101 — General Chemistry	5
	17

(1) For students with an adequate background (at least 4 semesters of high school drafting with grades of C or better), a placement test is available, on schedule, that may allow students to be excused from Drafting 105 and possibly Drafting 106.

(2) Suggested Electives

Specific electives may be taken only with the prior consent of your faculty advisor.

Data Proc 133 — Introduction	3
Math 161 — Analytic Geometry & Calculus I	4
Math 116 — Slide Rule	1
Math 147 — Introduction to Digital Computing	2
Mech Tech 261 — Numeric Control	3
Mech Tech 291 — Quality Control	3
Psych 101 — Applied Psychology	3
El Tech 111 — Fundamentals of DC Circuits	4
El Tech 112 — Fundamentals of AC Circuits	3
Bus Mach 175 — Machine Calculation	2
Mech Tech 292 — Theory of Foundry Practices	3

ARCHITECTURE

Architectural Technology 101 Materials & Methods of Architectural Construction

2 Sem Hrs

Prerequisite: None. A study of the basic building materials of the construction industry. Emphasis on handling and placing the various materials into typical assemblies and arrangements. (1-2)

Architectural Technology 105 Architectural

Drafting I

7 Sem Hrs

Prerequisite: None. Exercises in the fundamentals of Architectural Drafting including linework, lettering, symbols, orthographic and pictorial representation. Exercises in the development of freehand and instrument drawings of wall, roof, and floor assemblies of various types of construction. Introduction to construction drawings. (3-12)

Architectural Technology 106 Architectural

Drafting II

7 Sem Hrs

Prerequisite: Architectural technology 105 or permission of the instructor. Development of construction drawings for a residence including architectural, electrical, and mechanical. Development of outline specifications. (3-12)

Architectural Technology 111 — Mechanical and Electrical Equipment for Buildings 4 Sem Hrs

Prerequisite: None. A study of the fundamentals and operating principles of mechanical and electrical equipment for buildings; including water systems, fire protection, plumbing systems, air conditioning systems, electrical systems, vertical transportation, sound and signal systems, and acoustics. (4-0)

Architectural Technology 202 Specifications and Contracts 2 Sem Hrs

Prerequisite: None. A study of basic principles and legal implications of contracts, architectural office practice, specifications, and building codes. (2-0)

Architectural Technology 203 Estimating 2 Sem Hrs

Prerequisite: Architecture 101 or permission of the instructor. A study of the principles of calculating labor and material costs and of building construction. (2-0)

Architectural Technology 205 Architectural Drafting III 7 Sem Hrs

Prerequisite: Architectural Technology 106. Development of construction drawings for a non-residential building. Introduction to concrete and steel construction, with their various detailing requirements, symbolisms and characteristics in terms of installation of mechanical and electrical systems. Development of outline specifications. (3-12)

Architectural Technology 206 Architectural Drafting IV 7 Sem Hrs

Prerequisite: Architectural Technology 205. Interpretation of an architect's sketches into a meaningful preliminary which would indicate a buildable building in the envelope displayed. Development of construction drawings based on the preliminary. Simulated office procedure using project teams. Development of outline specifications. (3-12)

Architectural Technology 211 Elements of Structural Design 4 Sem Hrs

Prerequisite: Physics 101 or permission of the instructor. Review of basic mechanics. Analysis of live and dead loads on simple structural members. Use and limitations of wood, steel, and concrete handbooks in structural design. Use of

structural calculations in solving basic structural problems. (4-0)

Architectural Technology 221 Site Preparation 2 Sem Hrs

Prerequisite: None. A study of the fundamentals of site preparation including utilities, soil testing, landscaping, drives, and walkways. Elements of surveying including: use of equipment, measurement of distances, angles, elevations, contours, drainage, and other site work related to building design and location. Development of a site plan and details. (1-2)

Arch 231 Concrete Fundamentals 3 Sem Hrs

Prerequisite: None. A detailed study of the history, manufacture, characteristics and types of cement. Selection and design of concrete mixtures; sampling and testing plastic concrete; placing, finishing, and curing of concrete. Concreting during hot and cold weather. (3-0)

AUTOMOTIVE

ATS 101 Service Orientation and Maintenance 12 Sem Hrs

Prerequisite: None. The primary objectives of this course is to provide the student with the basic skills necessary for employment in the automotive service industry. Emphasis is placed upon job orientation, efficient shop organization, safe work habits, and the development of accuracy and care in the performance of mechanical duties. The student will be introduced to a background knowledge of the components and operating principles of the automobile through a program which is saturated with practical experience and with lecture classes utilized on an "as needed" basis. (6-18)

ELECTRICAL AND FUEL SYSTEM SERVICE

ATS 102 Electrical and Fuel System Service 12 Sem Hrs

Prerequisite: None. The student is exposed to the information necessary to perform efficient tune-ups and electrical services, to provide experience in component disassembly, testing and reassembly, and to perform needed bench tests of these components. Speed, quality, and thoroughness are stressed in this phase of the program along with the development of efficient work habits. "Hands on" experience is again emphasized through a utilization of lectures on an "as needed" basis. (6-18)

ATS 103 Suspension and Brake Service 12 Sem Hrs
Prerequisite: None. Emphasis is placed upon proper procedure involved with alignment and brake services, and on the ability to merchandise these alignment and brake services. The full utilization of "hands on" experience provides for development of diagnostic abilities along with development of sound repair and work habits which provides the basis for the maturation of a qualified alignment and brake specialist. (6-18)

AT 101 Service Orientation and Maintenance 3 Sem Hrs
Prerequisite: None. Students will perform "wait-on" maintenance and service jobs on customers' automobiles. Emphasis is on the types of service employers expect their technicians to perform. (2-3)

AT 103 Engines 3 Sem Hrs
Prerequisite: AT 101. (May be taken concurrently). Principles, design, construction, operation and service procedures of modern gasoline engines. Students are prepared for practical experience in engine maintenance and service. (2-3)

AT 105 Laboratory Practices 2 Sem Hrs
Prerequisite: AT 103. (May be taken concurrently). Students make practical application of service procedures and techniques included in previous technical courses. Primary objective is to provide students with supervised practical experience. (0-5)

AT 106 Automotive Electricity 4 Sem Hrs
Prerequisite: None. Course content is based on electrical fundamentals and practical applications. Instructional units include electricity and magnetism, storage batteries, ignition systems, charging system, starting systems, and instrumentation. (4-0)

AT 206 Wheel Alignment 3 Sem Hrs
Prerequisite: None. Study of automotive suspension systems including nomenclature, theory of operation, and service and repair procedures. Emphasis is on passenger car and light truck suspension systems, wheels and tires, steering gears, and related components. (2-3)

AT 207 Brake Service 3 Sem Hrs
Prerequisite: None. Passenger car and light truck brake systems are studied with emphasis placed on nomenclature, theory of operation, and service and repair procedures. Included in the program are power brake, emergency brake, and disc brake systems. (2-3)

AT 208 Laboratory Practice 2 Sem Hrs
Prerequisites: AT 205 and AT 206. (May be taken concurrently). Students make practical application of service procedures and techniques included in previous technical courses. Primary objective is to provide students with supervised practical experience. (0-5)

AT 110 Diagnosis and Tune-Up 3 Sem Hrs
Prerequisites: AT 103 and AT 106. Study of automotive diagnoses and tune-up procedures as they pertain to the function and control of the engine, fuel, ignition, starting and charging systems. (2-3)

AT 111 Cranking and Charging Systems 3 Sem Hrs
Prerequisites: AT 101 and AT 106. Comprehensive study of components and circuitry involved in starting and charging systems including the function, design, construction, operation, trouble shooting and service procedures. (2-3)

AT 112 Laboratory Practices 2 Sem Hrs
Prerequisites: AT 110 and AT 111. (May be taken concurrently.) Students make practical application of service procedures and techniques included in previous technical courses. Primary objective is to provide students with supervised practical experience. (0-5)

AT 113 Fuel Systems 3 Sem Hrs
Prerequisite: None. Students are exposed to the theory of carburetion along with a detailed study of the construction, operation, and trouble shooting practices involved with all components of a fuel system. (3-0)

AT 209 Electrical Circuits 3 Sem Hrs
Prerequisite: AT 106. Provides a thorough understanding of chassis and body wiring diagrams as they apply to diagnosis, replacement or repair of horn, lighting, accessory, signaling

and warning devices. Stress on interpretation of the function and location of units with respect to diagnosis, service and replacement of defective units. (3-0)

AT 211 Driveline Fundamentals 7 Sem Hrs

Prerequisite: None. A course emphasizing the fundamentals of major driveline components such as clutches, standard transmissions, overdrive transmissions, automatic transmission, differentials, and rear suspension systems. Service of these components is an integral part of the total program. (5-5)

AT 212 Laboratory Practice 2 Sem Hrs

Prerequisite: AT 211. (May be taken concurrently.) Students make practical application of service procedures and techniques included in previous technical courses. Primary objective is to provide students with supervised practical experience. (0-5)

AT 213 Service Management 4 Sem Hrs

Prerequisite: None. An orientation to the automotive industry: study of common channels of distribution, the major franchise, and allied lines. Included is the dealership, its location, building facilities and organizational structure. Emphasis is placed on service management responsibilities organizing service personnel, organizing facilities, establishing objectives and controlling performance. (4-0)

DRAFTING

Dr 101 Introduction to Drafting 10 Cr.

Prerequisite: None. Drafting equipment and use of instruments, Geometry of drafting, Spatial visualization, Lettering, Alphabet of lines, Standards, Conventions, Reproduction. Introduction to Orthographic projection, Multiview drawing, Isometric and oblique drawing, Pictorial and orthographic sketching, Sections, Auxiliary views, Revolution, and Dimensioning. (5-15)

Dr 102 Drafting I 10 Cr.

Prerequisite: Dr 101 or equivalent. Continued study in Orthographic projection, Pictorial and orthographic drawing and sketching, Auxiliary views and revolution, Sectioning, and Dimensioning. Introduction to: Threads and fasteners, Springs,

Intersections and developments, Perspective, Assembly and detail working drawings, Exploded and Design layout drawings. (5-15)

Dr 103 Drafting II 10 Cr.

Prerequisite: Dr 102 and M.T. 111. Continuation of Dr 102. Design and development drawings of parts produced by casting, forging, machining, press forming or fabrication; incorporating bearings and seals, fasteners and standard parts, springs, cams, gears, belt and chain drives, surface finish, and cost. (5-15)

Dr 105 Industrial Drafting 3 Sem Hrs

Prerequisite: None. Elements of orthographic projection for mechanical and electronic Technology. Lettering, use of instruments, sketching, multiview projection, sections and pictorial drawings. (0-6)

Dr 106 Industrial Drafting 3 Sem Hrs

Prerequisite: Drafting 105. Continuation of Drafting 105. Fasteners, dimensioning, layout, details, assembly, auxiliary projection and sketching. (0-6)

Dr 155 Orthographic Projection 3 Sem Hrs

Prerequisite: None. Use of instruments, lettering, principles of orthographic projection, auxiliary views, sections, dimensioning, pictorial drawing and white printing. (0-6)

Dr 156 Descriptive Geometry 3 Sem Hrs

Prerequisite: Drafting 155 or 106. Emphasis on space visualization and processes of solution. Problems comprise combinations of points, lines, planes, intersections, developments, warped surfaces, true angles, true size and shape, vectors, shades and shadow and conics. (0-6)

Surv 205 Elements of Surveying 3 Sem Hrs

Prerequisite: Mathematics 102 or equivalent. Elements of surveying; use of equipment, measurement of distances, angles, and evaluation, analysis and use of verniers; traverses and topographic surveys and mapping. (1-4)

Dr 216 Electrical Drafting 2 Sem Hrs

Prerequisite: Drafting 105, accompanied by Electronic Technology 214. Standard electrical symbols, elementary wiring diagrams, and electrical codes are studied and applied. (0-4)

ELECTRONICS

Eln Tech 101 Industrial Electricity and Electronics

3 Sem Hrs

Prerequisite: High school algebra or equivalent. A survey of the fundamentals of electricity and electronics. (2-2)

Eln Tech 111 Fundamentals of DC Circuits

4 Sem Hrs

Prerequisite: Mathematics 101 or equivalent. May be taken concurrently. Theory and applications of direct current electricity including resistance, basic circuit laws, magnetism, and direct current instrumentation. (3-2)

Eln Tech 112 Fundamentals of AC Circuits

3 Sem Hrs

Prerequisite: Electronic Technology 111, Mathematics 101. Mathematics 102 may be taken concurrently. Theory and applications of alternating current electricity including representation of AC wave, impedance, basic circuit computations, and alternating current instrumentation. (2-2)

Eln Tech 115 Electronic Devices

2 Sem Hrs

Prerequisite: Electronic Technology 111 or equivalent. May be taken concurrently. Study of transistors, integrated circuits, and vacuum tubes. Emphasis is placed on mathematical and graphical techniques used to describe their characteristics. (1-2)

Eln Tech 116 Electronic Devices and Circuits

2 Sem Hrs

Prerequisites: Electronic Technology 115, Electronic Technology 112 or equivalent. Electronic Technology 112 may be taken concurrently. Basic amplifiers and their characteristics. Both transistor and vacuum tube circuits are covered. (1-2)

Eln Tech 212 Electronic Circuits

3 Sem Hrs

Prerequisite: Electronic Technology 112. Study of the principles of operation and industrial applications of vacuum and gas tubes, photo-electric cells, and cathode ray tubes. Basic circuits using these tubes are studied. (3-2)

Eln Tech 213 Solid State Devices

3 Sem Hrs

Prerequisite: Electronic Technology 112 and 116. Study of the theory and applications of transistors and other semi-conductors. The practical uses of these devices in industrial and communication circuits are emphasized. (2-2)

Eln 214 Design of Electronic Circuits

4 Sem Hrs

Prerequisite: Electronic Technology 213. Elementary principles of operation of rectifiers, amplifiers of various types, modulation, demodulation, detection, and antennas are studied. (3-2)

Eln Tech 215 Electronic Control and Automation

4 Sem Hrs

Prerequisite: Electronic Technology 241 and 213. Automatic control devices including regulating and automatic feed-back systems are studied. Induction heating, resistance welding, process timing, and similar circuits are examined. (3-2)

Eln Tech 221 Electrical and Electronic Measurements

3 Sem Hrs

Prerequisite: Physics 112, accompanied by Electronic Technology 116. A study of the design, application and limitations of direct and alternating current, and electronic measuring instruments. (2-2)

Eln Tech 231 Electronic Fabrication

3 Sem Hrs

Prerequisite: Electronic Technology 216. Use of electrical hand tools, wiring, safety practice, techniques of commercial chassis fabrication, performance testing, and trouble shooting. (1-4)

Eln Tech 235 Electrical Circuits

4 Sem Hrs

Prerequisite: Mathematics 101 or equivalent. Basic direct and alternating current circuits and their applications in machine operation and control; electrical measuring instruments. (3-2)

Eln Tech 241 AC and DC Machines and Controls

2 Sem Hrs

Prerequisite: Electronic Technology 112. Basic study of AC and DC machines and their controls including relays, circuit breakers, controllers, and contractors. (2-0)

Eln Tech 252 Basic Industrial Instrumentation

4 Sem Hrs

Prerequisite: Electronic Technology 116, Electronic Technology 213 may be taken concurrently. A study of components or applied instrumentation including transducers, processing systems and recorders. Mechanical, electrical, hydraulic, pneumatic, acoustical, and photometric topics are covered. (3-2)

Eln Tech 291 Topics in Electronics

1-3 Sem Hrs

Prerequisite: Sophomore standing and permission of instructor. This course is intended to supplement the regular Electronic Technology sequence by providing a degree of specialization

for those students who are interested in a specific area of Electronics. A statement of proposed topics to be studied must be submitted for the divisional chairman's approval by the end of the second week of the semester. May be repeated up to six hours credit.

MECHANICAL

Mech Tech III Manufacturing Processes 3 Sem Hrs

Prerequisite: None. Fundamental production processes including ore reduction, steel making, heat treating, foundry practice, hot and cold working, press work, and production machining processes. (3-0)

Mech Tech 205 Basic Kinematics 3 Sem Hrs

Prerequisite: Physics 101 or Physics 111, Mech Tech 251, Math 102 or equivalent. Study of basic motion concepts; velocities and acceleration in mechanism, motion curves; cams; gears; belt, chain and gear trains; miscellaneous mechanisms. (2-2)

Mech Tech 206 Machine Design 3 Sem Hrs

Prerequisite: Mech Tech 251, Mech Tech 252 (may be taken concurrently.) General problems of force and motion applied to simple machines; design stress and dynamic loading; power and power transmission; shafts in bending and torsion; keys and keyways; pulleys, belts and gears; couplings; bearings; clutches; cylinders; screws, fasteners; springs; fits, allowances, and tolerances. (3-0)

Mech Tech 213 Machine Tools 3 Sem Hrs

Prerequisite: None. Introduction to the industrial shop. Safety, materials, hand tools, precision instruments, purpose and operation of machine tools. Course content is developed around the use of drill presses, lathes, shapers, mills, grinders, and saws. (1-5)

Mech Tech 215 Methods Engineering 3 Sem Hrs

Prerequisite: Mechanical Technology 111. Fundamentals of motion and time study, methods of motion analysis and principles of effective work flow; designing and evaluating improved methods. (3-0)

Mech Tech 220 Introduction to Fluid Power 3 Sem Hrs

Prerequisite: Mathematics 102 or equivalent. Fundamentals of

fluids, fluid circuits and their applications in machine operation, control and measuring devices. (2-2)

Mech Tech 221 Materials and Metallurgy 3 Sem Hrs

Prerequisite: None. Structure, use and treatment of ferrous, non-ferrous, and non-metallic materials as used in mechanical design. (3-2)

Mech Tech 251 Mechanics 3 Sem Hrs

Prerequisite: Physics 111 or Physics 101 and Mathematics 102 or equivalent. Study of forces acting on rigid bodies by analytical means; equilibrium laws for various force systems; centroids, center of gravity; moments of inertia, introduction to elementary dynamics. (3-0)

Mech Tech 252 Strength of Materials 3 Sem Hrs

Prerequisite: Mechanical Technology 251. Fundamentals of stress and strain, torsion, shear, bending, and deflection of beams, combined stresses, riveted and welded joints. (2-2)

Mech Tech 261 Numerical Control 3 Sem Hrs

Prerequisite: Data Processing 133. A basic course in numerical control applied to machine tools. History and description of types of control systems and the capabilities of each. Elementary parts programming is covered. The course is designed for students who have some knowledge of basic machine processes. Offered in Evening College only. (3-0)

Mech Tech 291 Quality Control 3 Sem Hrs

Prerequisite: Mathematics 102 or equivalent. Designed for individuals in industry who are interested in the basic philosophy of quality control and those interested in developing special skills in quality management. Included in the course are general concepts of data analysis and variation, basic probability concepts, quality control charting, machine and process capability studies, and acceptance sampling procedures. (3-0)

Mech Tech 292 Theory of Foundry Practices 3 Sem Hrs

Prerequisite: None. The course is designed to acquaint the student with foundry practices and the theoretical bases for them. Subjects covered include properties of liquids, pure metals and alloys, equilibrium and non-equilibrium solidification, gating and feeding of castings, cast iron metallurgy, molding and sand technology, refractory and melting practice, finishing operations, casting inspection, and casting design. Offered in Evening only. (3-0)

FACULTY

EMERITUS FACULTY

Devol, Lloyd (1961-1963) Kinsey, Dr. Daniel (1961-1967)

Elkin, Cova (1961-1968) Omans, Margaret (1961-1963)

Ewing, Meta (1961-1964) Plum, Kathleen (1961-1966)

Fritzemeier, Hulda (1961-1968) Williams, Fred (1961-1963)

Gase, Florence (1962-1968) Wilson, George (1961-1968)

Hellmuth, Erma (1961-1963) Wilson, Zane (1961-1966)

Adams, Lorne P. Associate Professor of Physics and Chemistry
B.A.; M.A. University of Michigan

Alberda, Maurice S., Jr. Assistant Professor of English and
Chairman of English Division

B.A. Kalamazoo College
M.A. University of Michigan

Altenhof, Carl L. Assistant Professor of Biology
B.S. California State College
M.S. University of Michigan

Anderson, Geraldine R. Instructor in Reading
B.A. Michigan State College
M.A. University of Michigan

Arman, Harold D. Instructor in Political Science
B.S.; M.A. Western Michigan University

Augustine, John F. Instructor in English

B.A. University of Michigan
M.A. New York University

Bauer, Chal S. Coordinator of Radiologic Technology

Registered Radiologic Technologist
University of Michigan Medical Center

Berlin, Rosalind K. Instructor in Art

B.S.A.; M.A. Michigan State University

Blackman, Roma B. Instructor in Nursing

B.S.N. University of Michigan

Blackwell, Dana E. Instructor in English

B.A. Radford College
M.A. Virginia Polytechnic Institute

Bocciardi, Guido Assistant Professor of English

B.A. Eastern Michigan University
M.A. University of Michigan

Boedecker, Karl A. Instructor in Economics

B.A.; M.A. Michigan State University

Borgman, Clayton H. Assistant Professor of Biology

B.A. Hope College
M.A. Western Michigan University

Breed, Charles A. B.S. Western Michigan University M.S. University of Wisconsin	Associate Professor of Art	Corliss, Bruce C. B.S.; M.S. University of Michigan	Associate Professor of Geology
Brinn, John H. A.A. Freed Hardeman College B.S.; M.A. Murray State University	Associate Professor of Mathematics	Crowell, Jack L. B.S.; M.S. Michigan State University M.S. University of Illinois	Instructor in Mathematics
Browsh, Virginia J. B.A.; M.A. Michigan State University	Instructor in Reading	Denman, Charlotte A. B.S.; M.S. Indiana University	Assistant Professor of Physical Education and Recreation
Burk, Connie J. A.A. Delta College	Lab Technician in English	DeVinney, Robert H. B.A. Albion College M.A. University of Colorado M.A. University of Kansas	Associate Professor of Mathematics and Chairman of Mathematics Division
Cady, Loren E. A.A. Bay City Junior College B.M. Oberlin College M.M. University of Michigan	Assistant Professor of Music	Doll, Louis W. B.S.; M.A.; Ph.D.; B.A.L.S. University of Michigan Ph.D. (Honorary) Nihon University	Professor of History
Cahill, Brendan R. B.A.; M.A. University of Southern California M.A. University of Michigan	Associate Professor of English	Dolson, Jessie R. R.N. St. Joseph's Mercy Hospital B.S.N. Central Michigan University	Instructor in Nursing
Campbell, Barry D. B.S. Eastern Michigan University M.S. Indiana University	Assistant Professor of Physical Education and Health	Downer, Lois A. B.S. University of Michigan M.S. University of California	Assistant Professor of Chemistry
Carrico, Paul E. B.A. University of Notre Dame M.A. Harvard University	Associate Professor of Political Science	Drumm, Pauline K. B.A. Eastern Michigan University M.A. Aquinas College	Assistant Professor of Journalism and English
Cheger, Jean G. B.S.; M.Ed.; Ed.D. Wayne State University	Assistant Professor of Sociology	Drury, Patricia B.A. Occidental College M.A. Claremont College	Associate Professor of History
Christensen, James A. A.A.S.; B.S. Ferris State College M.A. Michigan State University	Instructor in Business	Duckworth, Gene R. B.S. Northwestern University M.A. Central Michigan University	Assistant Professor of Speech and Chairman of Humanities Division
Cisky, Carl F. B.A.; M.A. Western Michigan University	Assistant Professor of Geography	Eggleston, Patricia C. B.A.; M.A. University of Michigan	Assistant Professor of Speech
Conway, Lynn V. Chairman of Health, Physical Education and Recreation Division B.S.; M.A. Michigan State University	Associate Professor of Physical Education		

Ellison, Gerald V. A.S. Amarillo College B.A.; M.A. Texas A & M University	Instructor in English	Gibson, Andrew H. B.S. University of Michigan M.A. Michigan State University M.S. University of Minnesota	Assistant Professor of Biology
Enger, Eldon D. A.S. Alpena Community College B.S.; M.S. University of Michigan	Assistant Professor of Biology	Glynn, Lawrence E. B.A. Marquette University M.A. Wayne State University	Assistant Professor of History
Esckilsen, Richard C. A.D. Delta College B.A.; M.A. University of Michigan	Instructor in Speech	Godard, Joseph M. B.A.; M.A. Wayne State University	Assistant Professor of Psychology
Ewing, Gayle D. B.A. Kentucky Wesleyan College M.A. University of Kentucky	Instructor in Business	Gosser, Jon W. B.S.; M.S. University of Washington	Instructor in Psychology
Fedorowicz, Judith P. B.A.; M.A. Michigan State University	Instructor in English	Grau, Gideon Director of Summer Conservatory of Music	
Ferrando, Richard J. B.S. Michigan Technical University M.B.A. Wayne State University	Assistant Professor of Business	Greene, Nelson G. B.A. Alma College M.A. University of Michigan	Instructor in Science
Feusse, Floyd A. B.S. Central Michigan University M.A. Colorado State College	Associate Professor of Business	Gronewold, Joan B. B.A.; M.A. University of Michigan	Instructor in Reading
Folgueras, Luis E. R.N. Rockland State Hospital B.S.; M.A. New York University	Director of Nursing Division	Grossman, Geneva H. B.A. Allegheny College M.A. University of Michigan	Assistant Professor of Reading
Freed, Samuel B.A. Northern Michigan University M.S. University of Michigan	Professor of Physics and Chairman of Science Division	Hackbarth, Clarence W. B.A. Elmhurst College M.S. University of Wisconsin	Associate Professor of Sociology
Freeman, Elizabeth C. B.S.; M.A. University of Michigan	Instructor in Art	Hall, Gerald L. B.A. Michigan State University	Instructor in English
Freiwald, Thomas R. B.S.; M.S. Stout State University	Assistant Professor of Architectural Technology	Hammontree, Peggy E. C.B.S. International College B.A. Butler University M.S. Indiana University	Instructor in Business
Gainey, Frances B. B.S. Central Michigan University M.S. Michigan State University	Associate Professor of Business	Harman, William C. B.A. Findlay College B.B. Chicago Theological Seminary M.A. Bowling Green University	Assistant Professor of English
		Hazan, Craig M. B.S. Brooklyn College J.D. University of Toledo	Instructor in Business

Heiber, William R. B.S. University of Dayton M.B.A. Xavier University	Assistant Professor of Business	Keil, Martha J. B.A. University of Kansas	Instructor in English
Heinert, J. Sumitra B.A. Isabella Thoburn College M.A. Allahabad University	Instructor in Geography	Keim, Isaac W. J. III B.B.A. Cleveland State University M.A. Michigan State University	Assistant Professor of Business
Herod, Darel M. B.S. Central Michigan University M.B.A. Central Michigan University	Instructor in Business	Kennedy, Crawford E. B.S.; M.A. Michigan State University	Assistant Professor of Physical Education
Hoerneman, Calvin A. B.A. Bethany College M.A. Michigan State University	Assistant Professor of Economics	Keyser, Dale F. B.S. Central Michigan University M.A. University of Michigan	Assistant Professor of Business and Chairman of Business Division
Hoffman, John T. B.S.; M.S. Stout State University	Instructor in Mechanical Drafting	Kilar, Jeremy W. B.A. University of Detroit M.A. Central Michigan University	Instructor in History
Holcombe, Michael L. B.S.E.E. University of Florida M.S.E.E. Montana State University	Instructor in Electronics	Klein, Richard E. B.A.; M.A. Michigan State University	Associate Professor of Economics and Chairman of Social Science Division
Homeister, Owen E. B.A.; M.A. Miami University	Assistant Professor of Geology	Kleinsmith, Wilbert C. B.A. Eastern Michigan University M.S. University of Michigan	Assistant Professor of Mechanical Technology
Howard, David C. B.S. Ball State University M.A. Indiana University	Assistant Professor of Economics	Kormelink, Richard B.A. Indiana University M.S. University of Utah	Instructor in Biology
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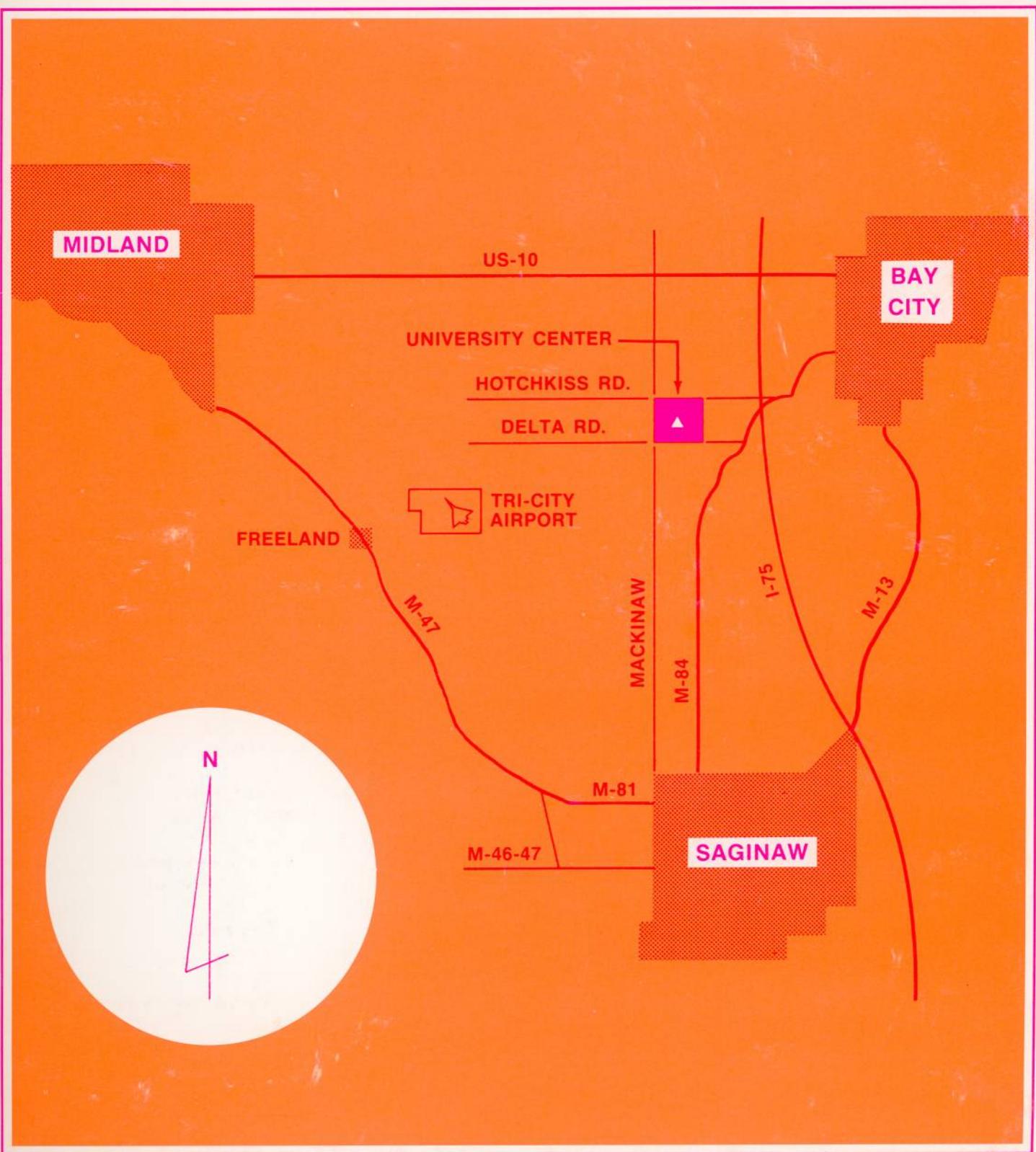
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